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Thursday, March 15, 1984

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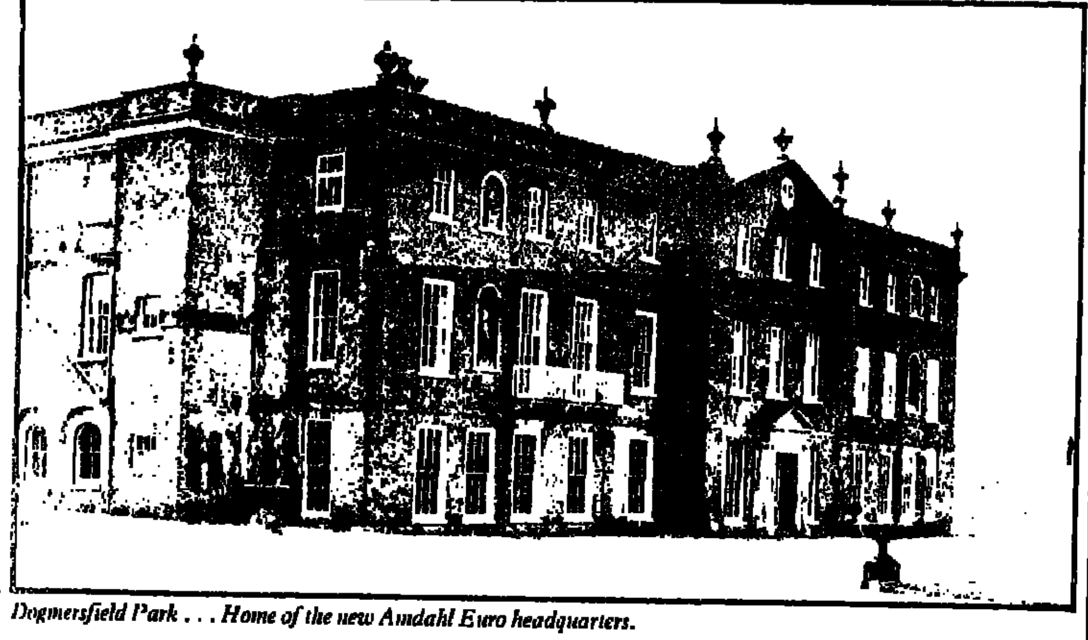

*Dogmersfield Park . . . Home of the new Amdahl Euro headquarters.*

# Amdahl buys stately home

**by Keith Holder**

LEADING US plug-compatible manufacturer Amdahl is moving to a stately home to pull its staff together in a new European headquarters in Britain.

It has acquired Dogmersfield Park, in Hampshire, which will initially provide 38,000 square feet of space to be used as its administrative and training centre, at a cost of £6 million.

The move is necessary, says a spokesman, because the company's level of European business is growing significantly, requiring a larger centre for operations.

The decision to buy an existing property was made so that the operation could be completed quickly, he adds.

The previous headquarters was nominally based in London, though because of its size, certain functions were devolved to other main offices in Europe.

Despite the move away from London, the company is confident that it has good access to Heathrow Airport and the UK motorway network.

Peter Williams, Amdahl's general manager (European operations), says: "Dogmersfield Park will additionally provide our staff with a more pleasant environment, and has the potential for expansion to 80,000 square feet."

The move will not affect the company's existing UK base in Hounslow, which will continue to provide customer and sales support, he adds.

The company plans to occupy the building around the beginning of July, though the move is not scheduled to be completed until the end of the year.

No plans have been finalised for additional staff recruitment, and it is hoped that most of the existing staff will transfer.

Barrie Munn, managing director of Sherfield (Investments), which negotiated the sale, says that the conversion is probably the first to be carried out according to the recommendations of a recent report on design of buildings for the high technology industry.

# Trilogy returns to drawing board

**by Dave Madden**

GENE Amdahl's attempt to leapfrog IBM and the rest of the mainframe world with the Trilogy supercomputer based on revolutionary chip technology seems to have failed.

Trilogy has been forced to redesign the processor which was to form the basis of its machines, and go for a down-graded version of the technology to "reduce the technical risks" associated with the project.

The company is delaying the proposed introduction of the Supercomputer until the middle of 1986.

A spokesman for Trilogy concedes that the initial project has been "too ambitious in some respects", and explains that "we have had to standardise our design options".

In effect, the company has simplified the design process of its wafer scale integration semiconductors. Although the company says that this will make subsequent development stages easier, it will result in slower processor speeds, and "inferior performance than we originally envisaged".

As a consequence of the simplification, Trilogy has decided to drop the single CPU version of the IBM-compatible machine. It will now offer a dual processor as standard. The upgrade will be a four-processor version, an option that was not possible under the previous design.

The company says that the dual processor version of the system will operate at about three times the power of an IBM 3081K mainframe. The more ambitious single processor design had been promised at four times the power of an IBM 3083J machine.

In January, Trilogy put back shipment dates to the fourth quarter of 1985, after the interconnection technology of its prototype semiconductors faded. Trilogy says that those problems have been resolved, but the company will not have new prototypes to test before the end of this month.

The company claims that far from being worried by the delay, its investors view the announcement "positively". A spokesman said: "Our technology licencees, such as DEC and Sperry, have reacted well to our decision. It makes their development strategy that much easier."

Trilogy had been due to begin production in Ireland in the summer of 1985, but it will not need to move into its facility there until that time, and does not envisage going into production until a year later.

# Retailers plead for piracy suit cash

**by John Kavanagh**

THE UK Computer Retailers Association is trying to drum up industry backing for a software piracy lawsuit which, it believes, could set a legal precedent for future cases.

The case is being brought against a public body by Kuma Computers, a small firm in Pangbourne, Berkshire. The Association has been collecting details of possible piracy lawsuits and says it has a "clear cut" case with this one.

It is now trying to raise between £8,000 and £10,000 from its members — an average of £250 each — and hopes to get trade associations and others together in April to ask them to contribute.

But the influential Computing Services Association (CSA) says the effort should be directed through the Federation Against Software Theft, set up just before Christmas with the support of leading names such as IBM, ICL and the National Computing Centre. Services Association director-general Doug Eyeions will be away on holiday when the meeting is held.

"It's difficult to get people to volunteer money," Eyeions says. "The Retailers Association's proposed £10,000 won't buy many days of legal advice."

Paul Rayner, chairman of the Association, says Kuma must itself be prepared to fight to the finish. It must be prepared to meet most of the costs.

"There's been a dozen cases but they've all been settled out of court," Rayner says. "We need a proper court case, hopefully going all the way to an appeal, to set a firm precedent. At present, people are vague about copyright legislation."

# Apple fires vice-president Kvamme

**by Dave Madden**

APPLE is dropping Floyd Kvamme, its vice-president of marketing and the man brought in to set up its marketing division just 14 months ago.

Kvamme, who joined Apple in January 1983 from NatSemi's National Advanced Systems, is expected to leave the company tomorrow.

His responsibilities will be divided between the company's existing US vice-president, sales, and vice-president, distribution, and the vice-presidents for Europe, the Americas, and the Far East.

Kvamme is moving into the venture capital business. He plans to set up as coach, or troubleshooter, for young high technology companies.

He will be staying in California, but will not reveal which venture capital outfit he will be joining.

Meanwhile, disaffected investors have brought a class action suit against Apple and its senior executives.

The suit alleges that the company's officials knew that Lisa faced both technical and marketing problems, that the project would ruin Apple's financial performance during 1983, and made deliberately optimistic statements in order to safeguard Apple's share price.

Steve Jobs and John Sculley, chairman and president of Apple respectively, are both named in the action.

Apple says that it was still reviewing the case, but that its initial response is that it "is without merit."

No date has been set for a hearing.

*KVAMME . . . Dropped.*

# ACT deal

■ **From front page.**

The worldwide marketing rights would include France and Germany, where Victor has its own subsidiaries. The future of these is uncertain. ACT is setting up its own French subsidiary, to get going by the beginning of April, and ACT managing director Roger Foster is confident of its success.

"There's no duty between Common Market countries, so all we have to do is load the waggons in Scotland and drive them over," he says.

ACT builds its own Apricot in Glenrothes in Scotland, and Foster is keen to add the Sirius to the machines manufactured there.

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# Dealers lodge official complaints against ACT

**by John Riley**

IN the wake of the Office of Fair Trading's finding last week that Apple was attempting to maintain retail prices, two dealers have lodged similar complaints against Applied Computer Techniques (ACT).

One of the complainants, Victoria-based C/WP Computers, placed the original complaint against Apple. The other complainant, Windsor-based dealer KGB Micros, wants to lower the retail price of the Sirius and Apricot by up to 25%, but wants written assurances that ACT will not stop supplying the machines if they do.

C/WP Computers, an IBM-PC dealer, applied to become an ACT dealer last year, but was turned down this January. Robin Adda, a co-director, believes that the reason was that ACT feared that C/WP would advertise its micros at a discount.

"People assumed that our disagreement with Apple was because we were a troublesome dealer, not because Apple was breaking the law," says Adda. "We applied to ACT to become dealers, and at the time it indicated it wouldn't allow dealers to discount products."

David (Sandy) Saunders, managing director of KGB Micros, says that he made a formal complaint to the Office of Fair Trading just before Christmas.

Saunders alleges that ACT attempted to maintain re-sale prices, although verbally and not in writing. "The problem is that ACT, unlike IBM, makes no effort to specify what a dealer can do," he says, adding that this has resulted in a large number of ACT dealers.

"ACT wants to protect smaller dealers to make sure that ignorant computer users get protection. But that doesn't make any difference to those dealers that won't supply support — they'll still take their profit," he says.

John Leftwich, ACT's marketing manager, comments: "As yet, we have not received any official notification from the Office of Fair Trading. ACT has never terminated a dealer agreement over pricing.

"Discounting is normally a catalyst that leads to poor end-user support, and our policy is to ensure that the user has the highest level of support."

He adds that ACT always responds to user complaints.

The Office of Fair Trading confirms that both KGB Micros and C/WP Computers have lodged complaints.

■ ACT wins Victor rights — front page.

Computer Weekly
Thursday, March 22, 1984 Number 903 35p

# IBM clamps down on PC supplies

IBM has put the brakes on supplies of its Personal Computer and PC/XT microcomputers.

A letter sent to all UK dealers on Monday states that they may now order only 25 machines per month because of a shortage of key components.

This contrasts with a statement made by IBM two weeks ago when it reduced prices by up to 20% and said production at its Greenock facility had been successfully scaled up at the beginning of the year. Richard Holway, marketing director of Hoskyns, one of the UK's largest suppliers of the IBM-PC, says that the price cuts followed by the shortage will lead to a large backlog of orders.

He adds that his company could easily fill orders for over 100 machines per month at present.

Even IBM admits that it has handled the affair badly. A spokesman says: "It is very embarrassing, but we are not alone in facing a component shortage." On a more optimistic note, he adds: "We expect this to be a temporary problem and we are confident that we will meet our production targets for the year."

# BT at Westminster

BRITISH TELECOM has won the £1 million contract to supply a 5,000-line telephone exchange for the Houses of Parliament. The exchange, a Merlin DX digital PABX made by Plessey, will be installed in three parts in three separate buildings, with its processors linked by two Mbit-per-second BT Megastream digital leased lines. It will switch data as well as voice telephone calls.

# ICL collaborates

ICL today announce its collaboration with Rediffusion Robot Systems on the development of factory automation systems. It is understood Rediffusion will be responsible for the shopfloor level, controlling machines and robots, and ICL will be responsible for the level above that.

# CDC negotiates

CONTROL Data (CDC) has become the fourth mainframe manufacturer to negotiate rights to the wafer-scale-integration semiconductor technology of Gene Amdahl's Trilogy Systems. It is making an initial payment of $2 million and will pay royalties on all products using the Trilogy technology. Trilogy's other partners are Sperry, Bull and Digital Equipment.

# Tebbit tosses £180 million to technology

**by Dave Madden**

GOVERNMENT funding for new technology has been increased by some £180 million. In a Commons statement on the final day of the Budget debate, Trade and Industry Secretary Norman Tebbit outlined the new measures

■ £120 million to continue the Microelectronics Industry Support Programme, now to be called MISP2, until 1990;

■ £12 million to carry the Software Products Scheme through mid-1985. It has used the £25 million already allocated to it;

■ £20 million for advanced manufacturing technology. An allocation of £35 million for the present Flexible Manufacturing System Scheme is close to being committed;

■ Information technology centres to be increased from 150 to 175;

■ Extension of the Design Advisory Service, with another £5 million for the Quality Assurance Advisory Scheme. Special provision for the clothing footwear, and textile industries to encourage the use of advanced technology at a cost of £20 million over four years.

The original funding for MISP, which was launched in 1978 to encourage the microelectronics manufacturing industry, is exhausted.

Information Technology Minister Kenneth Baker, who gave details of how the new money would be spent, said MISP will have supported 160 projects and stimulated investment of £270 million in 40 companies.

Baker said the new funding would develop production and use of microelectronic components, and underpin the Alvey and Esprit programmes.

More than half of MISP2 will finance industrial capacity to supply equipment used to make semiconductors.

Baker said the government is encouraged by the way the industry has responded to MISP. He claimed that the UK would produce integrated circuits worth £300 million in 1985, while our consumption of microelectronics has risen from 20% of the European whole in 1980, to 29% in 1983, and now exceeded that of Germany.

But, said Baker: "While I'm only too keen to boost, and boast of our progress, it must be put in perspective, there is not one UK semiconductor manufacturer among the world's top 30."

Baker said the new money is "catalytic," and he estimates that MISP2 will help inspire total investment of £600 million.

The software products scheme is to be re-focused with two priorities: it will support products that seem to have major export potential, and secondly, it will encourage development of software productivity tools.

Baker was pressed on the apparent paradox that MISP funds had gone to the likes of GEC, and Ferranti, while the government was now refusing Inmos further funds.

He described this as unjust: "Inmos has received £100 million from the government in loan and equity funds. It is now in a position to raise money in the private sector and I'm very confident it will do so soon."

Inmos was welcome to apply for support under MISP2, he added.

*BAKER . . . "Progress must be put in perspective."*

■ Leader Comment – page 17

# Europe forces standardisation

**by John Riley**

TWELVE top European computer companies have bowed to European Commission pressure and agreed to standardise connections for their products – if the EEC and its national governments will buy them.

The dozen companies, which include eight of the 10 largest European computer firms, last week announced their agreement to implement Open Systems Interconnection (OSI) standards in their products, starting in 1985.

And the companies aim to set up a series of multi-vendor projects to demonstrate the "practical interworking of products implementing these standards". The group hopes for cash from the EEC to help set up these projects.

But the European Commission's current £7 million project for developing standards is currently on the shelf awaiting approval from the Council of Ministers. This is unlikely to be forthcoming for at least six months, as it was put on ice when the Council approved the much more ambitious European IT programme Esprit.

More realistically, the companies have called on the EEC to recommend that public buying of computer equipment specifies the agreed OSI standards.

The European Commission encouraged the 12 companies, all involved in the first round of the Esprit project, to set up a committee, and sent a prepared document to each company for agreement.

The companies are: ICL, Plessey, GEC, Philips UK, Thomson, Bull and CGE of France, AEG, Nixdorf and Siemens of Germany, Olivetti and STET of Italy, and the Dutch Philips.

According to ICL, the companies plan to implement standards which will cover existing and forthcoming International Standards Organisation and CCITT standards, including transport protocols, electronic mail, document interchange, document structure and the processing of graphic information.

The agreement resembles an agreement made in January between the national telecommunications authorities to accelerate their moves towards common telecommunications standards. It is almost coincidental with the long-term policy of the European Computer Manufacturers Association (ECMA).

Nearly two years ago ECMA got 20 companies to agree to back Marnet standards and TSO transport layer protocol.

However, ECMA's technical officer for OSI standards, Luigi Lauri, says: "I hope it's nothing different to what we're doing."

And John Foote, head of the Department of Trade and Industry's Focus committee, which helps manufacturers to anticipate standards, would make no other comment than: "It is in line with what we've been trying to do with our Intercept Strategy."

The ostensible aim of the agreement is to give European users a greater freedom of choice, and prevent them from being locked in to any one supplier.

The one supplier that the dozen European companies and the European Commission wish users to be unlocked from is widely interpreted as being IBM.

An IBM spokesman says: "We welcome international harmonisation of standards which could lead to greater choice and lower costs for users as well as broader opportunities for all manufacturers."

But the Yankee Group recommends that Europe adopts IBM's SNA standards — see page 6.

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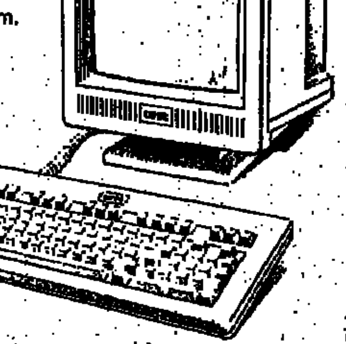

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# Machinery allowances phased out in Budget

by our Parliamentary Correspondent

THE main news of the week from Parliament for computer firms – and everyone else – was given by the Chancellor of the Exchequer, Nigel Lawson.

He announced the phased abolition of first-year capital allowances for plant and machinery, and provided one of the few unleaked surprises of the Budget speech.

The current 100% allowance in the first year for machinery and/or plant was cut from the day after the speech to 75% and is to drop to 50% for expenditure incurred on or after April 1, 1985.

Lawson says it will be wiped out for expenditure incurred on or after April 1, 1986.

For an analysis of this and other budget moves, see page 10.

The UK's autonomous islands, the Isle of Man and the Channel Islands, are likely to take steps to avoid becoming "data havens" after the passage of the Data Protection Bill.

David Waddington, junior Home Office Minister, told the Commons Standing Committee on the Bill that the Channel Islands is likely to take advantage of the provision in the Bill which allows its extension through an Order in Council to cover databases in the well known tax haven.

The Isle of Man has indicated its intention to introduce its own Data Protection Act and this will be closely modelled on the UK legislation.

Speaking in the Budget debate, the Chief Secretary to the Treasurey, Peter Rees, revealed that the cable TV industry and the Inland Revenue had had talks on the tax treatment of the cost of providing the protective ducting in which the cable was inserted and the cost of cutting and covering the trenches in which it is to be laid.

After taking legal advice, Rees added, the Inland Revenue was informing the industry that such expenditure qualified for capital allowances.

Taken in conjunction with the announcements about phasing out capital allowances, the decision by the Inland Revenue would allow the industry to make its future plans in full knowledge of the tax implications.

The Cable Bill has had its Third Reading in the Lords and is now in the queue in the Commons.

■ Donald Kennett adds: There were smiles all round when the government last week accepted an amendment to the Telecommunications Bill which was designed to help UK suppliers of equipment and services compete effectively with foreign suppliers.

Happiest was TEMA (Telecommunications Engineering and Manufacturing Association) in the person of its director Hugh Macdonald-Smith, who had been closely involved in the formulation of the amendment.

Close behind was the Conservative Lord Orr-Ewing, sponsor of the amendment, which has had several revisions to bring it in line with EEC regulations and the worldwide General Agreement on Tariffs and Trade (GATT).

And the Independent Lord Weinstock, managing director of the UK's biggest electrical company, GEC, said he welcomed the amendment because he understood it would enable the Secretary of State for Trade to ensure that the British telecommunications equipment manufacturing industry (of which GEC is one) was able to compete with foreign suppliers.

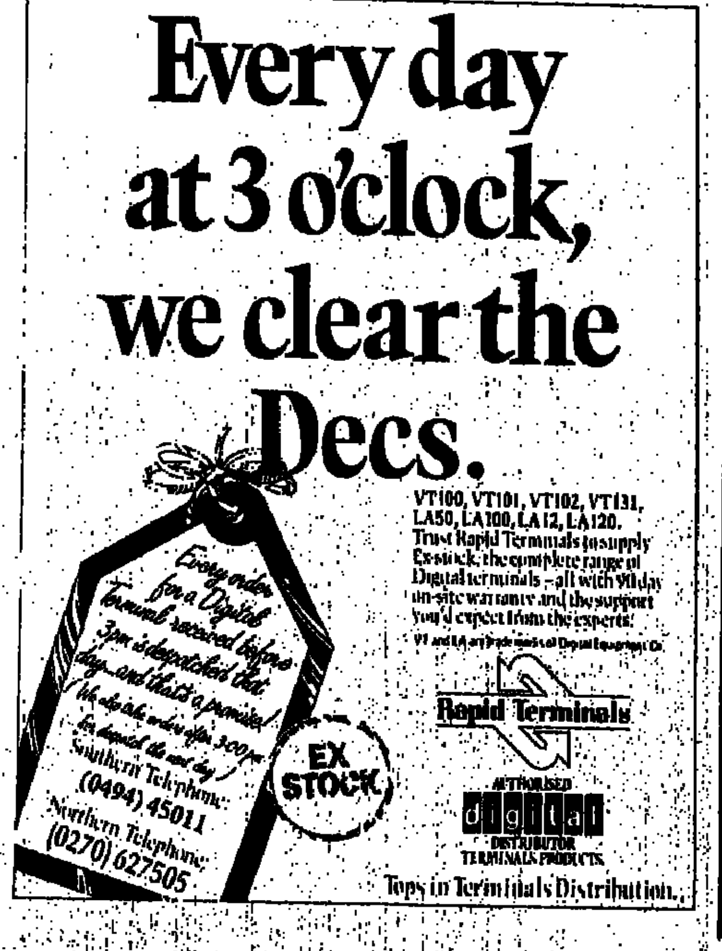
The amendment itself is in two parts and provides as positive duties for the Secretary of State for Trade and Industry that he enable persons producing telecommunications services in the UK to compete effectively, and do the same for those producing apparatus.

Macdonald-Smith admitted later: "The provisions of the amendment were already included in the Bill . . ."

But these were apparently rather vague.

The new phraseology, according to Orr-Ewing, means that "if we pin this down then anyone can draw attention to it if they are not doing it".

He hopes this will mean the UK industry gets the same sort of diplomatic and consular support overseas that the French give to their industry.



# Japan bids to grab US software secrets

by John Kavanagh

ANGER is boiling up in the West over proposed changes to software copyright rules in Japan which will open up the secrets of US and European packages to Japanese firms.

The proposals have outraged the US Congress, and Vice-President George Bush has sent senior Commerce Department officials Clyde Prestowitz and James Murphy to Tokyo to voice the US government's objections.

The Commerce Department has also threatened reprisals if the proposals go through.

The ideas are the work of Japan's Ministry of International Trade and Industry (MITI) which claims it is merely protecting users' interests and eliminating the risk of duplicated effort.

MITI wants to introduce 15-year patent-type protection for software in place of copyright, which offers protection for 50 years. In addition, it wants software owners to register details of their packages to cut the duplication of development – and to give the registration body a copy of the source code to protect users if the suppliers go out of business.

"The patent idea is rather hair-raising," says Fred Perkins, UK managing director of the multinational services group, I. P. Sharp. "A lot of companies have had their fingers burned in the past by showing products to the Japanese and later finding those same products appearing in slightly modified form."

*PERKINS . . . "Hair-raising."*

Maureen Smith, director of the Japan office in the US Commerce Department, says: "We feel the intention is to give Japanese industry access to products which it has not been able to get through commercial negotiations. Congress is outraged about it."

She says if copyright protection is removed in Japan and replaced by patents, the US would also drop copyright protection for Japanese software.

Douglas Eyeions, director-general of the UK's Computing Services Association, is also concerned about the drop in protection from 50 years to 15.

"You'd think the 15-year limit wouldn't matter, but many products have parts which are 15 years old," he says. "The Ramis II database and enquiry system has lots of the original Ramis in it. Many things written for the IBM 360 operating systems are still in use. The Filetab language is coming up to 15 years old. When you start to look you see every reason to worry."

*TIMPANY . . . "Happy to work on a royalty basis."*

# Tycom joins OEM micro market

TYCOM, maker of the Microframe micro, is moving into the lucrative OEM micro market. The company is to supply a West German OEM, Beta Systems, with 10,000 of its Centralised Area Networks (CAN), the architecture at the centre of the Microframe, over the next three years.

Beta plans to build a business system complete with keyboard, screen and floppy disc drives for under £2,000.

Tycom managing director Allen Timpany says several other large OEM licensing deals will soon be concluded in the UK.

Despite the company's success with the Tory Party, which is taking 200 micros in the next two years, the Microframe has so far not sold as well as hoped since the launch at the end of 1982.

Timpany said at the time of the launch that 10,000 machines might be sold in 1983, the first full year. But sales were held back by early production problems, and are running at about 150 a month.

The main problem is that at over £3,000 for a basic system the machine is too expensive for a single user machine.

Timpany hopes volume deals with OEMs will enable prices to come down by about 30%. "The combined volumes are enough to get prices competitive," he says.

But the company will have to reckon with Glasgow-based Future Technology Systems, which does 90% of its business through OEMs. Timpany says Tycom has already run up against Future in a bid for a contract, but claims that the two companies' operations will to some extent be complementary.

"Future offers a higher degree of customisation, but we offer a higher degree of compatibility," he says.

Timpany adds that his company will be more closely modelled on Convergent Technologies, the US supplier of micros to OEMs. "But unlike them we don't want to hog the manufacturing rights. We are happy to work on a royalty basis."

# UK skilled labour and low pay attracts US firms

by John Kavanagh

THE UK is by far the favourite overseas factory location for US electronics firms, thanks mainly to the Conservative government and good labour relations.

So says UK research firm The Electronics Location File in its 1984 survey*. Nearly 40% of the 760 firms surveyed say they plan to set up plants outside the US in the next three years – and 28.5 of those companies have chosen or shortlisted the UK.

There follows a wide gap to the Irish Republic with 16.9%, and West Germany with 16.6%.

"Companies in this industry will be significant suppliers of new investment and jobs in the British economy," the survey report says.

The main factor in the choice was the UK's good labour relations. "While generally the UK may seem unable to offer this, its electronics industry can and in fact has a very commendable industrial relations record," according to the report.

The UK has a skilled labour force, and wages are often less than in other European countries, says the report.

US firms particularly like Margaret Thatcher's government. The UK's popularity took a slight knock in last year's survey with the prospect of Labour winning the election.

A related issue is the UK's EEC membership, cited as another main reason why the US favours this country.

Other reasons include good transport and communications by rail, road and air, government financial incentives and the common language.

Tann vom Hove, editor of the report, says the UK is not set to become the Taiwan of Europe.

"US companies like the fact that we have very good universities and other centres of excellence.".

He adds: "Britain's electronics industry and economy as a whole can expect to benefit immensely: the US industry is poised to expand and is brimming with confidence. Close to 95% of the companies anticipated an improvement in the US electronics industry's outlook in 1984, compared with 83% last year.

**Outlook for the American Electronics Industry in 1984.* £10. 4pp. The Electronics Location File, 17 The Green, Richmond, Surrey TW9 1PX. Tel: 01-948 5721.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# IBM sales just keep on growing

by Keith Holder

IBM SALES for the UK showed a sustained growth in 1983 with net profits up 41% to £255 million, according to unaudited results. The company further asserted its position as the number one computer company in the UK, with UK sales up 35% to £1,677 million.

Sir Edwin Nixon, chairman and chief executive, says IBM's progress last year was "again excellent".

No detailed breakdown is given of which areas contributed most to IBM's success, but the company points to its Personal Computer (PC) and the introduction of the 4361 and 4381 mainframes as being particularly successful. IBM now has 220 UK outlets for the PC, and is getting 40 applications a month from dealers wanting to sell the machine.

Nixon also described as "outstanding" the export performance of the Greenock and Havant plants. The Greenock plant is heavily involved in the production of the PC and the hard disc expanded version of the company's micro, the PC/XT, which had production stepped up last year.

Capital investment was up by 23% to £146 million in 1983, although this includes the value of rented machines, which are accounted as though they were still with IBM.

Nixon adds: "Last year I was optimistic about our growth prospects and I believe that the optimism has been justified. Similarly, I believe this year will be another of great opportunity for IBM United Kingdom in a buoyant marketplace.

In the US, Don Estridge, president of IBM's Personal Computer division, has said that the company will spend around $500 million on new plant and equipment this year.

The investment would be split equally between new plant and equipment, systems and plant.

He also made a passing reference to the company's new multi-user system, known at present as Popcorn, saying that it would be launched this year.

This squares with what US IBM watchers are already saying, though the feeling is that it may come sooner than indicated by Estridge's comment.

Two reasons are given for this: IBM has recently signed an agreement with US chip manufacturer Intel, covering in-house manufacture of some of Intel's chips, principally the 8088 microprocessor, though analysts are saying that the agreement also covers manufacture of the 80186, which is expected to be used as the video and graphics controller for Popcorn; and the company is known to have developed its own version of the Unix operating system.

*NIXON . . . "Excellent progress."*

# ICL denies rumours of BT discussions

ICL has denied City rumours, reported in *Financial Weekly*, that it is in discussion with British Telecom, about the latter taking an equity stake in the company.

In a forthright statement ICL asserts: "There is no truth in the suggestion whatsoever – it sounds like wishful thinking on someone's part."

Derek Bainbridge, a BT watcher at W. Greenwell & Co agrees. "It is very unlikely. BT is very different from American Telephone & Telegraph. It is absolutely not what BT needs now, and there are many better opportunities."

But another stock market analyst, close to ICL, said that no matter how incredible the suggestion seemed at least one senior industry figure was convinced that the companies were talking, though probably at the "highest level".

Any investment in ICL by British Telecom would certainly not take place before the flotation of BT shares late this year.

# Aware software spawns successor

by Nuala Moran

A MICRO awareness software package for local government managers has been so successful that it has spawned a successor for private business. The Applications Demonstration Package, which runs on the BBC Micro, has sold 150 copies since its launch last June. It is now being broadened into a package for small business users, "Putting the micro to Work".

The package was developed under the auspices of the IT82 project to help managers in local government learn about micros. Clive Holtham, who chaired the project, explains its development: "We were very pleased indeed with sales and decided to build on this proven success for a wider audience."

The latest package is being developed by the Local Government Operational Research Unit which also wrote the original software. The new package will be marked by Acornsoft, the software arm of Acorn.

The research unit announced an IT strategy service in a move to help local authorities to get the best out of information technology. Brian Whitworth, the unit's director, says the new consultancy service would help local authorities to maintain and improve their services at a time when they were under pressure to cut costs.

"Our service is very flexible. We can look at a whole authority or department, we can look at the information needs right across the organisation, or we can look at the delivery problems of a particular service," he says.

The unit has already advised Shepway district council in Kent on its information technology strategy, has has just been asked back to prepare a short list of manufacturers to implement the plan. David Jackson, who headed the investigation, says: "We rapidly realised in looking at Shepway that the real problem had little to do with IT but how the authority should work. Technology is the outcome of looking at how the organisation works. We're not making the organisation fit the technology."

The unit's latest commission is to advise the civil servants union, the Institute of Professional Civil Servants on the use of new technology at its headquarters.

# Reuters boss meets unions for strike talks

by Philip Hunter

GLEN Renfrew, managing director of international news agency Reuters, is today meeting unions for the first time in the hope of reaching a settlement in the two-week-old strike of 300 programmers, analysts and key technical staff.

The agency's management, as well as Fleet Street proprietors who own shares in Reuters, hope that today's meeting with the national council of the National Graphical Association will bring a settlement to minimise damage to prospects for the agency's imminent stock exchange flotation.

Reuters has grown quickly in the last five years by selling computerised financial information services, and turned over £180 million in 1982.

Fleet Street stands to make a lot of money from the agency's flotation on the London Stock Exchange in May, and it has been suggested that for this reason the present strike has received little coverage in national newspapers.

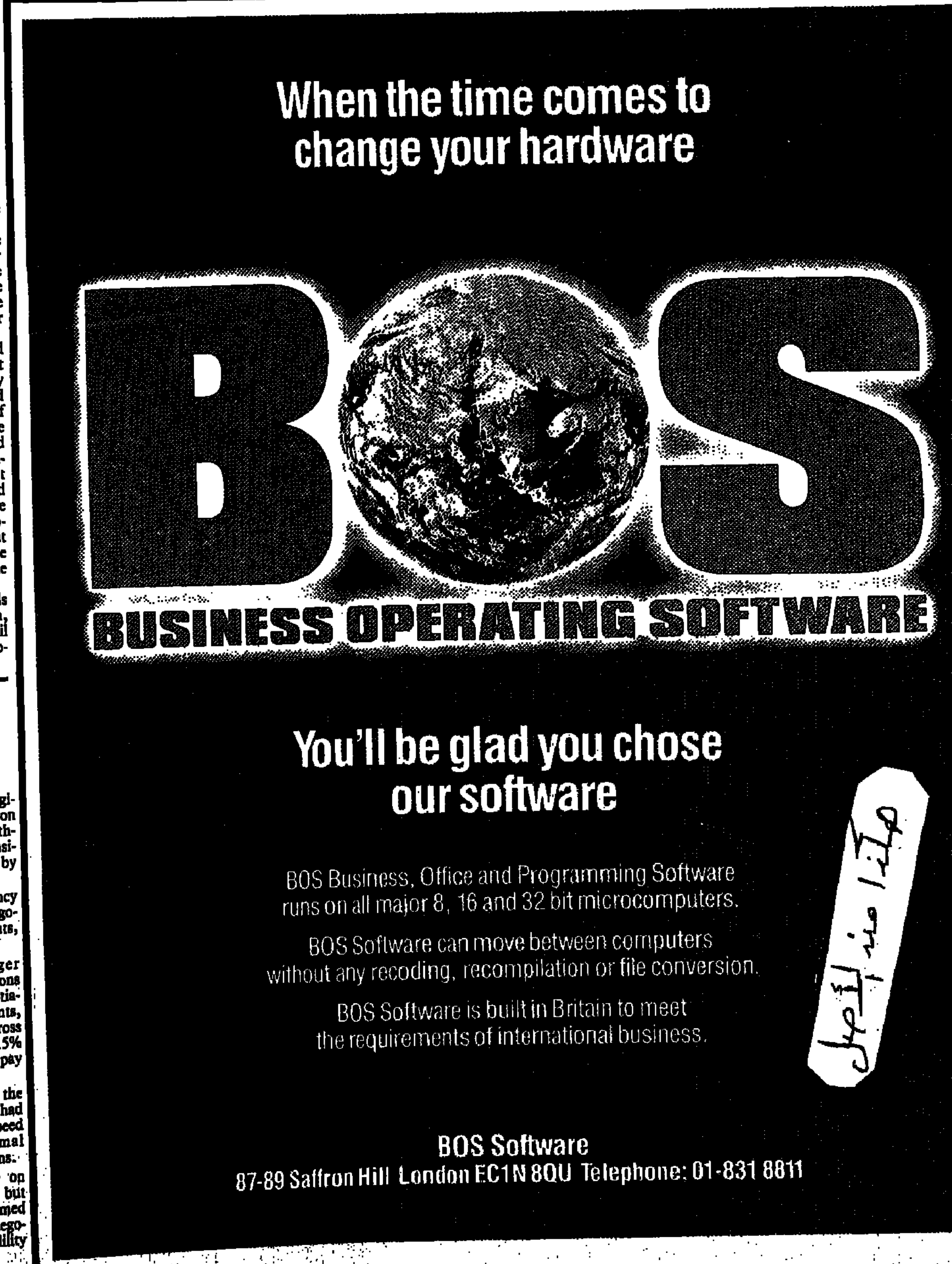
The strike began when two engineers who had refused to work on new high speed teleprinters without a new agreement on responsibility payments were suspended by management.

Unions claim that the agency had promised last summer to negotiate on responsibility payments, but never made a decent offer.

Assistant general manager Kevin Garry claims that unions suddenly pulled out of the negotiations on responsibility payments, and instead demanded an across the board 5% in addition to 15% being sought in the annual pay round.

The strike was started by the suspension of two people who had refused to work on new high speed teleprinters without a formal agreement on pay and conditions.

Unions had lifted a ban on working with new equipment, but reinstated it because they claimed the company was refusing to negotiate as promised on responsibility payments.

# Acorn improves graphics

by Philip Hunter

ACORN Computer has unveiled its product strategy for the rest of this year, beginning with the launch last week of a second processor that boosts the graphics facilities of the BBC Micro Model.

The company has also promised another add-on processor within two months, a Zilog Z80 to enable the BBC Micro to run business software based on the CP/M operating system.

Both processors use Acorn's recently patented Tube interface on the BBC Micro, a high-speed data channel which enables external processors to be closely coupled with the single central processor.

CP/M is not new to the BBC Micro, since Cambridge-based Torch already supplies a product that enables the machine to run CP/M-based programs. But the Torch product is based on a disc pack of twin floppies containing a Z80 board.

Acorn marketing manager Tom Hohenberg promises that all BBC Micro software will run unchanged on the CP/M version of the machine, and says that software compatibility will also be extended to the new Acorn Business Machine due for launch later this year.

Software compatibility will then be complete across the whole range of Acorn micros, from the £200 Electron, up to the new business machine.

"Instead of expanding by bringing out a totally different operating system and non-compatible computers, we've tried to follow the lines of existing machines," says Hohenberg.

The new 6502 second processor has 64K of user memory, and runs 50% faster than the existing central processor.

Acorn has also developed a Hi-Bask ROM Chip with 44K of user memory. The idea is that this 44K is now freed for programs written in Basic, leaving 60K for assembly language programs.

*HOHENBERG . . . "We've followed the lines of existing machines."*

# Firms get help to teach the world

by Nuala Moran

THE government is to back UK microcomputer companies in tackling world education markets.

The Department of Education and Science (DES) is helping firms which have produced equipment and materials for the Microelectronics in Schools Programme to export these products.

But there is still no decision on a Department of Trade and Industry multi-million pound scheme to establish the UK as a world leader for educational software.

The scheme, expected to be announced this month, was mooted to develop software for secondary schools. It would follow-up the successful Microelectronics in Schools' Programme.

Education minister Bob Dunn said this week the DES would help by providing advice, organising teacher training, developing software and co-ordinating equipment provision.

He was speaking to UK exhibitors at the world's largest educational equipment exhibition, Didacta, in Basle, Switzerland, where 15 British companies are taking part in the Great British Micro Show.

Other government-linked agencies are also helping out. A DES spokesman said: "The British Council has a very important role in this because it has offices in so many countries and 70-80% of its activity it gets to hear what's going on before we can.

"This means that it can indicate if there is an interest in micros for schools."

The British Council has also helped with setting up exhibitions in Italy, Spain, Germany, Saudi Arabia and Singapore. And the DES receives delegations from overseas and takes them to see the way micros are used in schools.

The spokesman says: "In the last four weeks we have shown four international delegations what's going on, and there are three more organised for the next three weeks."

This support is beginning to pay off. Acorn has sold micros for use in Australian schools and it has received an order for 500 micros from India.

The DES is not just interested in machines. Dunn told exhibitors at Didacta: "The various methods of making software available has allowed not far short of 1,000 educational programs to be published in the UK. These will be complemented by the literally hundreds more programs now in development stages."

A catalogue of all this material has been set up by the DES, which is now in the process of establishing a national computerised database to allow easy access to up-to-date information.

# User is the sales key, say experts

END-USER training is the key to most micro sales. That was the oft-repeated message from speakers at last week's Computer Trade Conference at Wembley.

Michael Milman, managing director of Debenham's subsidiary Greens Business Systems told delegates of the emphasis that his company places on training in order to retail to first-time users.

Greens offers a range of 28 training courses concentrating on specific hardware and software packages.

Whereas Greens is banking on volume sales to the 1.2 million small businesses employing less than 20 people, Planning Consultancy managing director Graham Summers is making a success of selling to large corporate users by fronting his micro sales with a range of courses.

His recent seminar programme which was given on the premises of the Institute of Directors, reached 2,500 executives. He outlined his various seminar techniques and maintained that the courses by themselves showed a profit.

He concluded: "The dealer may sell his company through many forms of education."

Russ Nathan, managing director of market research firm Romtec, presented some data on software markets. Bitstik, a software package from Lynx for architects, surveyors and engineers, is the biggest-selling package to micro users, according to Nathan.

The next two most popular applications are for bar and restaurants and for estate agents, both sold by Ormbeta Software.

Not surprisingly statistics compiled by Romtec show that Basic is the most popular language, followed by Cobol and Assembler. But they also show that dBaseII, the relational database from Ashton-Tate, is growing in popularity as a language for micros.

Computerland's European managing director, Chuck Hansen, pledged that it would be servicing a minimum of 15 UK franchisees by the end of 1984 and would have 80 within five years. He outlined the Computerland approach to the customer and he too underlined the importance of training.

Computerland is the largest franchiser of business micro stores in the world with over 600 outlets on its books at the moment.

Peter Cobb, Apple UK's managing director, spoke on what he expects from his dealers and what Apple can offer in return. He pointed to the difficulties of selling value to a market which has become particularly price-sensitive.

# Distributor slams the greedy

by John Kavanagh

A UK microcomputer distributor has accused UK manufacturers of greed and complacency and warned that their "bad and irresponsible" marketing will let the Japanese take over.

Paul Vaughan, managing director of Broadway Electronics, says manufacturers give dealers profit margins of only 10 or 15% – and some are making things worse by muscling in on retailing.

They are complacent because they do not see that the market is changing, he says.

Vaughan's comments are borne out to an extent by a new report on the Japanese computer industry by US research firm Venture Development Corporation*. The report says that aggressive marketing by Japanese firms and a willingness to accept low margins have made Japan the world's second biggest computer producer.

But the Japanese threat to the UK microcomputer market is dismissed by David Broad, chairman of the British Microcomputer Manufacturers Group. He believes the threat will continue to come from the US – and adds that UK firms are more than holding their own.

Vaughan says contacts in the Far East have convinced him that the Japanese are poised to invade Europe.

"They will win over distributors with incentives like 35% margins," he says. "And once they have a foothold, their products and marketing techniques are such that they will be really difficult to beat.

"If people think it cannot happen they should try riding home on their British motor bike to watch their British television or listen to their British hi-fi."

The Venture Development report says: "The willingness of Japanese firms to accept lower margins allows them to compete aggressively on the basis of price."

The report says that the main goal of the leading manufacturer, Fujitsu, is to "aggressively increase" its world market share.

"Management is determined to maintain its leading position in the Japanese market, and is seeking to increase international sales by establishing numerous relationships as an OEM supplier, and eventually by increasing direct exports," the report says.

*BROAD . . . Dismissive.*

Fujitsu's mainframe partners include ICL in the UK and Siemens in Germany. It has just taken a 49% stake in the US IBM-compatible mainframe supplier Amdahl.

The report says Japan accounts for over 12% of world computer production – almost as much as all other nations put together apart from the US.

**The Japanese computer industry: a strategic analysis.* $2,150. 12 pages. Venture Development Corporation, One Washington Street, Wellesley, MA 02181-1789, US. Tel: 0101 617 237 3000.

## SALES BRIEF

### Videcom wins race to £1m BT contract

UK TERMINAL maker Videcom has beaten Newbury Data and Cipher to a £1 million contract with British Telecom for displays to be used in accounting, word processing, and for timesharing applications on large bureau systems using local area networks. The order involves supply of Apollo terminals, designed and manufactured by Videcom, which is based in Henley-on-Thames, for emulation of Digital Equipment VT131 and VT52 terminals.

### Probably the best

CARLSBERG, the Danish lager brewer, has bought a decision support system for its IBM personal computers from the UK software firm Package Programs Ltd (PPL), for budgeting and forecasting. PPL is to supply its IFPS/Personal packages launched last autumn.

### Watching weather

THE Meteorological Office has installed its second Series 7000 graphics system for its Satellite Meteorology Branch's research unit at the Department of Atmospheric Physics, Oxford University. The systems, worth £50,000 each, act as powerful image processors and can be used for interpreting satellite data, and mapping of foggy areas.

### Bleasdale installs

BLEASDALE Computer Systems has installed a 68000-based Unix engine in the Health and Safety Executive Research Laboratory at Buxton, Derbyshire. The computer is being used for enhancement of X-ray flash photographs of controlled explosions in mines, to investigate the reasons for failed detonations that sometimes occur.

### Xtec BT delivery

NETWORKING equipment worth £300,000 is to be delivered by communications specialists Xtec as part of British Telecom's operations and maintenance centres. The contract calls for 12 Series 3 and 32 Series 4 terminal access controllers, to be used along with the new System X exchanges.

### Trustee software

A MAESTRO software development system from Philips Business Systems will be delivered next month to the Manchester-based computer services operation of the Trustee Savings Bank. Over £200,000 of hardware and software will be delivered.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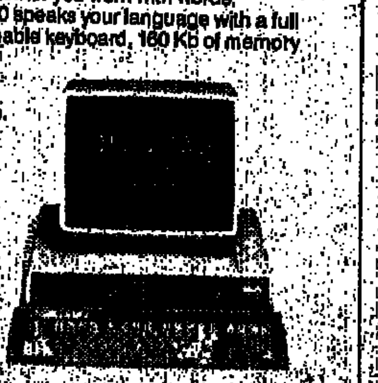

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# Intelligence boss denies rumours

by Claire Gooding

ASHLEY Ward, managing director of financial systems house Intelligence UK, has denied that the company is in trouble. The rumours started last week following the sudden departure of 12 employees – nearly a quarter of Intelligence's staff.

"We are actually growing at the rate of 120%," says Ward. "We have dropped the staff because we were simply too big. We misjudged the number of people we'd need to cope with the growth. There are a number of new things coming along and we need to be slim and fit to cope with them."

Intelligence has built its business on the Micromodeller financial forecasting package. It used the system to model its financial and growth pattern and axed the extra staff when it became clear that Intelligence could not afford to carry them.

The *Daily Telegraph* reported last week that Intelligence had dismissed the 12 abruptly and sent them home by cab the same day.

"There were bound to be rumours of liquidation," says Ward. "In fact most of the rumours come from jealousy at our success. The truth is we are doing well. Even if we were in trouble we have major investors who wouldn't let their investment go."

The National Coal Board Pension Fund put £1.1 million into Intelligence last year. The company is quoted on the "over the counter" 163 Stock Exchange, and is currently valued at £4 million.

According to Ward, the dismissed staff were the less skilled and more junior people, largely inexperienced programmers and unqualified engineers. He says there is "a good atmosphere" among the remaining 39 staff at Intelligence.

Deputy managing director, Richard Harris, stresses that research and development remain top priority, and confirms that the entire Intelligence product line is still fully supported.

Intelligence faced much user criticism last year for not supplying updated versions of Micromodeller, and the user group is still seeking clarification of Intelligence's intentions on support.

The user group, the Business Micro User's Association, has recently been expanded from pure Micromodeller interests to include users of other systems. Intelligence itself has faced fierce competition from a plethora of modelling products, including the updated US "original" of its own system sold by rival firm Dataflex, which was set up by ex-Intelligence staff.

"The competition doesn't bother us," says Harris. "We are moving out of their level anyway. It was a matter of generating enough profits to fund future development. Although we were exceeding revenue targets, we had too many people for the level of growth."

*WARD . . . "We are actually growing at a rate of 120%."*

## Learn more about robot skills

by John Riley

THE Open Tech's 50th project which was launched last week is a course to encourage people to learn more about robots.

The four year programme was set up just over one year ago by the Manpower Services Commission (MSC) to provide wider access to technical training on a "drop in and learn" basis with an emphasis on informal training.

Its budget was recently increased from £28 million to £40 million.

The robot literacy project will be administered by the London office of the international Organisation for Rehabilitation through Training. Stuart Dalziel, the acting head of the MSC's Open Tech Unit, says that this project will help the introduction of manufacturing systems using robots.

The Open Tech uses distance learning techniques, with each project operating from a range of centres. The Open Tech differs from the Open University in that it works from the bottom up rather than top down, and courses are established on an industry or regional basis.

## 20,000 East German schools to get micros

by John Kavanagh

THE East German government is to put microcomputers in 20,000 secondary schools over the next two years following the launch of the country's first two home computers at the Leipzig Fair last week.

East Germany's computer manufacturer, Robotron, and the microelectronics specialist, Mikroelektronik, both introduced eight-bit machines based on a Zilog Z80-type processor made by Mikroelektronik. The machine cost about £400 for a basic keyboard and processor unit.

The average monthly wage in East Germany is £250.

The government scheme was drawn up by the Education Ministry with Robotron and is backed by the head of the government, Erich Honecker.

It calls for the introduction of one machine at each of the country's 20,000 secondary schools, for use by 14- and 15-year-olds. A few trial machines will be delivered this year but bulk deliveries are expected to start next year. Every school is due to be equipped by the end of 1986. Extra machines are expected to be installed for other classes after that.

Robotron sales executive Klaus Lorenz says the machines will be used to introduce children to programming and as a general teaching aid in traditional subjects. He says Robotron will train the school teachers.

If the scheme gets off the ground East Germany will be one of the very few countries to have national school microcomputer programmes.

■ Details: page 12

*HONECKER . . . Micro for every secondary school policy.*



# Reagan's tough stance stiffens East's resolve

by John Kavanagh

THE hardening US line on technology exports to East Europe has had the opposite effect to that intended. Far from hindering development in Communist countries, it has speeded it up.

That was the claim made by defiant Communist computing and electronics organisations at Leipzig Fair last week.

East Europe is still some way behind the West: the biggest disc drives have capacities of only 200 megabytes, communications lines are poor and the newest products include expensive home computers based on processors similar to the old Zilog Z80.

But the hard line adopted by President Reagan's government has forced Communist countries to become more self-sufficient.

"In many ways the new hard US measures have helped us by encouraging us to develop our own technology much faster," says Gerhard Merkel, head of research and development at the East German computer manufacturer, Robotron.

"We now make our own components and peripherals and so on, and we could speed up development if necessary."

Rudiger Sobe, director of Robotron Export-Import, agrees. "The US has imposed a 30% import duty on goods from Socialist countries and government agencies are no longer allowed to buy Socialist countries' products," he says. "That was a harsh move, for we had sold typewriters to US government agencies for many years.

"These and other US moves hindered us, but recently they have reinforced our determination in our own developments."

The determination seems to have made it possible for East Europeans to become wary of "cowboys" looking to take advantage of their traditional technological hunger.

"We used to import US floating point processor chips unofficially through Mexico but the quality was very poor because we were willing to take whatever we could get," says a representative from the Czech computing organisation Kovo. "The chips are now made as straight copies by the Soviet Union. We import them from there – and 90% are OK."

This comment is significant because Kovo people are generally scornful of Soviet technology. As recently as 1980 a Kovo man at the Leipzig Fair laughingly pointed out that a "new" Soviet DEC-compatible minicomputer had core memory. And in that year the Czech machines were using US memory chips – now the Czechs make their own 16K chips.

The hard US attitude was noticed by some of the dwindling number of Western firms exhibiting at Leipzig. Regulars like IBM, NCR, DEC and Wang have long given up and only one or two big names persevere.

Hewlett-Packard was there with the HP80 microcomputer. "The US attitude has made things noticeably harder for us over the last year," says Franz Lorber, a manager in the company's Vienna office.

"The Series 80 is OK because it has an old processor. But we couldn't show the new range with the touch-sensitive screen."

Rank Xerox Eastern Europe manager Gina Niendorf says export rules allow the company to sell its word processors – but not spare parts.

"If a chip fails we cannot send a new one," she says. "We have to take the system back to put in the new chip."

She adds that business with Communist countries is getting worse: the company has cut its stand size by half.


European UNIX® Systems User Group

EUUG

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The European UNIX Systems User Group (EUUG) is to hold its 1984 SPRING CONFERENCE in The Netherlands. The event will feature informative TECHNICAL SESSIONS covering current UNIX developments in graphics, text processing, networking, distributed UNIX systems, programming environments such as SMALLTALK and PROLOG, editing environments such as EMACS, and database management. Amongst the personalities in the UNIX field who have been invited to speak at the Conference are BRIAN KERNIGHAN (Bell Laboratories, USA); ERIC ALLMAN (Britton-Lee, USA); BRIAN REDMAN (Bell Telephone Laboratories, USA); and LARRY CRUME (AT&T, USA).

TUTORIAL SESSIONS will cover advanced editing, advanced shell programming, advanced text processing, the C programming language, UNIX networking, 4.2BSD UNIX, the UNIX market situation, and AT&T licensing.

Running concurrently with the Conference will be an EXHIBITION at which most of the major UNIX vendors in Europe and the USA will be represented.

*Further details and application details concerning this important UNIX event are available from:*

The Secretariat, EUUG, Owles Hall, Buntingford, Hertfordshire SG9 9PL, England. Telephone: Royston (0763) 73039


## Pundits want an SNA Euro standard

by John Riley

THE European Commission is ducking the real long term solution for a networking standard, say consultants from the Yankee Group. It should wake up to the demands of suppliers to use IBM's SNA networking protocols as the basis for a standard.

According to Al Dunn, the Yankee Group's European director, the question is not whether Europe should go for SNA – which most large companies already use anyway – but "how much of the standard that they can persuade IBM to open up."

Dunn is optimistic that IBM would open up SNA if looked like becoming a de jure standard.

Dunn and his colleague Don Tombs have had extensive meetings throughout Europe recently with suppliers, PTTs and the European Commission.

Both Dunn and Tombs believe that the International Telegraph and Telephone Consultative Committee (CCITT) which meets to set up communications standards "won't get Levels 6 and 7 of the International Standards Organisation (ISO) model right". They see the committee standards going the same way as teletex standards where "the protocols were interpreted differently in each country".

"CCITT by the year 2000 will have less importance in terms of office automation standards, by which I mean administrative support systems, and not transaction processing, than IBM," says Tombs.

"European suppliers want to go for DIA/DCA and that is a difficult pill to swallow," he adds. DIA/DCA is the more complex set of protocols.

Dunn and Tombs argue that the national PTTs are split over the question, while suppliers want to use SNA as a standard.

*DUNN . . . Optimistic.*

## Pirate solution is near

by John Kavanagh

LEADING UK computing firms and government agencies have agreed on the design of a device aimed at becoming a world standard solution to the software piracy problem.

The government's British Technology Group and National Physical Laboratory are now putting together a full prototype specification. These two organisations are part of a consortium including 10 companies led by ICL and some big software firms, which are backing the project to the tune of £5,000 each.

The consortium approved the outline design at its last meeting and will meet early in May to sign off the detailed specification.

Companies will probably then be invited to bid for the manufacturing rights to the device. The consortium believes the device could be sold for around £50.

The device is a tamper-proof box of electronics which deciphers and runs programs sold in encrypted form on disc or tape. The box will run all or part of a program. It plugs into a standard RS232 port.

Dr Brian Wichmann, who is co-ordinating the work from the National Physical Laboratory, says the device could protect software on microcomputers or mainframes. Mainframes software could be protected by plugging the unit into terminals, he says.

Wichmann points out that estimates put the revenue lost through software piracy at between £30 million and £50 million a year in the UK alone.

The consortium knows of no similar collaborative work anywhere in the world. Wichmann says the group is aiming to help UK industry – but adds that the proposed standard solution must be accepted internationally, otherwise UK software exports could be hit by the need to have the device to run the products.

*ALLIN . . . "Designed for simplicity."*

## Terminal is aimed at new class of user

by Keith Holder

TELEVIDEO the world's largest independent terminals supplier, is launching a low-cost Personal Terminal next month which it hopes will open up a new class of user. The terminal is designed to give users an efficient distributed system for computer data, electronic mail and telex communications.

"This is not just another terminal, but a serious attempt to open up electronic communications to a new class of user," says Peter Allin, managing director of Televideo.

The potential market for the machine is about four times that for conventional terminals, Allin says.

The £400 machine uses conventional teletype channels to hook up to existing computer systems, and has a built-in modem for telephone communications between offices anywhere in the world.

Allin says unlike conventional terminals and personal computers, the Personal Terminal has been designed for simplicity and is intended for use only as a means for sending and receiving information.

To this end it has been made small enough and light enough to be used in the same way people use a telephone now, he says. It has a socket which allows a telephone handset to be connected and offers autodial facilities.

A printer may also be connected to supply hard copy.

## BCS backs Alvey

by George Black

THE British Computer Society has set up a specialist group to support the Alvey Programme's man-machine interface initiative, which has run into problems.

The group, which held its first meeting recently, is the brainchild of Nigel Bevan of the National Physical Laboratory, who will be its chairman. Meanwhile, the strategy document for the man-machine element of the Alvey Programme has gone back for a rewrite after participants failed to agree its contents.

According to Bevan, the source of the difficulty is that few of the people in the industry grappling with questions of user-friendliness regard themselves as part of the man-machine community.

The British Computer Society (BCS) group aims to stimulate concern about the problem through generating publicity, holding events and co-ordinating the various interested parties.

Alvey director Chris Barrow has already staged a series of three-day workshops, and the BCS team plans to complement these with meetings in May and June. Prime movers in the group will be Professor Brian Shackle of Loughborough University, an establishment which is one of few higher education centres which tackles this area, and Ivan Brown of the Ergonomics Society.


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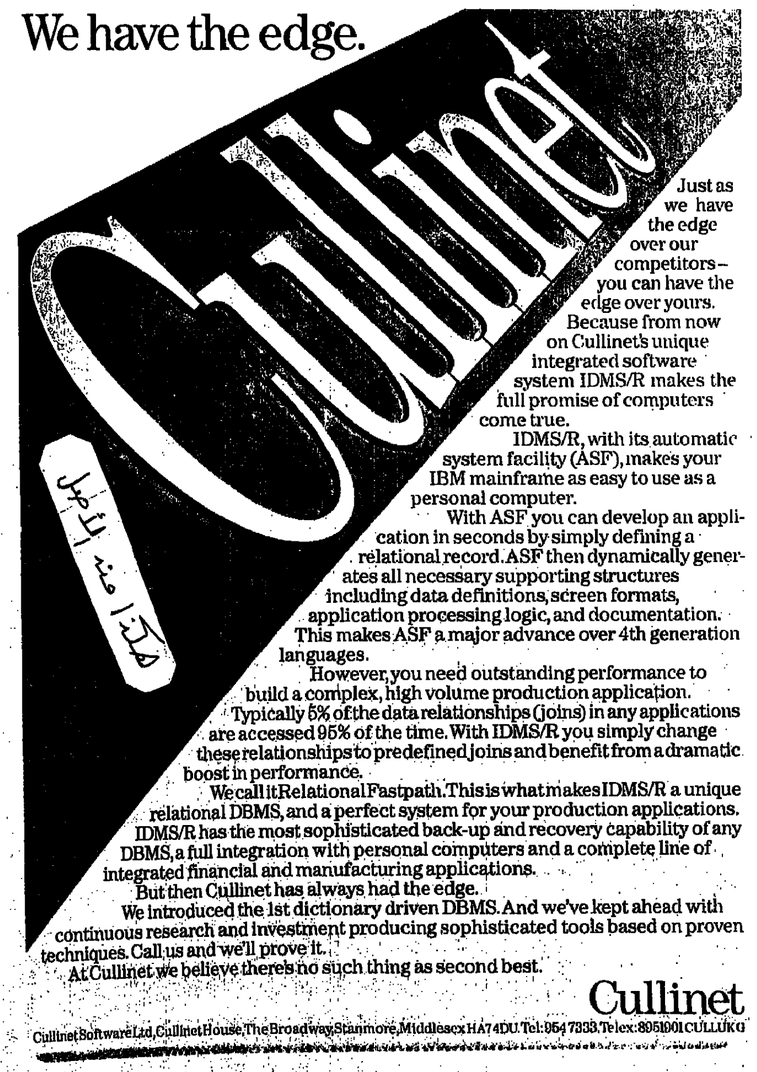


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## Cullinet sales break million barrier

CULLINET Software's UK sales passed £1 million for the three months ending January 31, 1984, 139% up on the same period last year. UK managing director Vic Morris says that increased sales of integrated manufacturing and financial software packages were largely responsible for the growth.

US sales were up from $20.1 million to $31.3 million for the same quarter, and profits jumped 40% to $4.23 million.

## Package spreads

PACKAGE PROGRAMS has spread its net to the Middle East with a new office in Bahrain. The company has been operating in the Middle East since 1978 and has over 40 packages installed in major organisations in Bahrain, Kuwait, Abu Dhabi, Quatar and Saudi Arabia. Prudence Jazayeri will head the Bahrain office, recruiting local staff, with senior support coming from the company's London office.

## Micropro move

MICROPRO, the Californian developer of the successful Wordstar word processing package, is to try to break into the competitive financial spreadsheet market. The $50 million turnover firm is launching a new product called Planstar which goes on sale at the end of this month, running under both CP/M and PC-DOS.

## Duquesne here

DUQUESNE Systems, Pennsylvanian owner of IBM mainframe systems products such as QCM and SDSI, has set up a UK office in Croydon. The firm, which went public in January, counts ICI, Massey-Ferguson and National Westminster and Barclays banks among its users. It turned over nearly $5 million in 1983.

## Decus meeting

THE head of the government's information technology standards work, Keith Bartlett, will address Digital Equipment users at the annual conference of Decus next month. His appearance comes as the government is aiming to overhaul its own internal communications to bring them in line with international standards. The UK arm of Decus has 6,000 members.

## Floyd wasn't fired

FLOYD Kvamme resigned from his post as executive vice president for sales and marketing at Apple Computer, and was not fired as stated in last week's issue. He is moving to an as yet unspecified Californian venture capital outfit, and will not be directly replaced at Apple.

# Storage launches optical system

by Keith Holder

US PERIPHERALS manufacturer Storage Technology has launched its large capacity optical disc storage system in Europe, the first of a family scheduled to appear over the next two years. It is ready to take orders now, for delivery in the fourth quarter.

The 7600 uses an interchangeable 14 inch disc, and is capable of storing four gigabytes (million bytes) of computer data, graphics, diagrams or other image data, like X-ray films.

Gene DeKoster, the company's vice president for optical products, says that this is equivalent to one million typed sheets of A4-sized paper, 40 reels of magnetic tape or the contents of 1½ IBM 3380 magnetic discs.

He says that the market for write-once disc systems of this size is enormous, and estimates that shipments this year will exceed 500 units, followed by 6,500 sales in 1985. If true, this would be worth $70 and $650 million respectively.

DeKoster estimates that main market for these systems will be in areas where the residual value of information increases with time.

He illustrates this by comparing the value of scientific experiments, like the Voyager deep space probe missions, hospital records or corporate performance data, which he says may prove to be valuable years after they are compiled.

The storage life for data on the optical disc is put at 10 years by the company, though there is no guarantee given. This compares with three to five years for magnetic media.

Although the present model only takes one disc, DeKoster was quick to emphasise that this was the first of a family which will include multi-disc systems, using a jukebox style for storing the discs.

The system uses the company's existing 8880 controller, which is plug compatible with IBM processors, and is supported by MVS 1.3. A version which will run under MVS/XA will be launched in the summer.

The company is already negotiating a number of OEM deals with other computer manufacturers and estimates that around half of its sales will be to OEM customers next year.

One system has already been installed in the US, at the Word Weather Centre in Colorado, which will use the system to record weather patterns.

This is acting as an alpha test site, though beta testing is due to start in April and customer shipments to Europe are scheduled for the beginning of the fourth quarter.

DeKoster says that he does not see the new optical media as competition for conventional magnetic discs, but sees it replacing paper, microfilm and other photographic media as a form of mass data storage.

The actual disc uses changes in retractive index, rather than laser etching to record data. This allows an inbuilt verification subsystem to check the data for accuracy and burn it out if it is incorrect.

The company quotes a bit error rate of one wrong bit in 10 discs. Prices for the 7440 optical disc will be around $200, and the 7600 unit will cost $140,000.

DeKoster says he expects the price to fall once the systems start to sell in quantity giving a cost per Mbyte below 30 US cents over the next two years.

*POTTER . . . Says he will not abandon games market.*

# Psion is game for some business software

by Keith Holder

A £10 MILLION UK computer games company is making the switch to business software.

Psion has a contract to provide the bundled applications suite for the Sinclair QL microcomputer, and is planning to sell packages as separate items for other microcomputers.

Psion has already demonstrated an impressive growth rate selling programs for Sinclair's machines, the ZX81 and Spectrum.

The company's success so far had been fuelled by sales of popular home computer games like "flight simulator", with about 500,000 sold to date.

Profits have risen in just three years to stand at £1.94 million on a turnover of around £10 million. Now the company is looking for a more business-oriented image, though founder and managing director, David Potter, says the company will not abandon the games market.

Psion is anxious to see the QL delivered in quantity, as this will give its "bundled" business packages their first real airing.

These comprise word processing, spreadsheet and business graphics packages, all three of which are claimed by the company to be faster and more advanced than current offerings from US software houses like Microsoft.

The Sinclair deal will give the products an important initial "push", says Potter, as they are included in the £339.95 price of the machine, but Psion plans to do similar deals with other micro manufacturers.

## ICL man calls for standards debate

by Philip Hunter

A CALL for a public debate on computer and communications standards was made last week by ICL's technical director, Mike Watson, during a lecture at London's Queen Mary College.

"The emphasis now should be on developing standards for the basic infrastructure of the computer industry," said Watson. "Previously standards have been private to companies or sectors of the industry."

The work should be controlled, however, because bad standards can inhibit progress, Watson stressed. "There is still the risk that we will standardise too early."

Watson admitted that there is the possibility that standards would inhibit progress towards products the user needs, if they are ill-conceived and too hastily implemented.

Watson lamented the lack of UK activity in the semiconductor market. "It is an unmitigated tragedy that there is not a healthy UK semiconductor industry," he said.

Watson admitted that it was difficult for a country of the UK's size to have a thriving industry in semiconductors because of the high capital investment involved.

This was the reason ICL was not interested in buying part of Inmos, the UK's state-owned semiconductor company.

*WATSON . . . Admits danger.*

## Prime buys control package

by Andrew Thomas

PRIME has taken a further step towards offering an integrated CAD/CAM package with the purchase of the rights to a numerical control package from CADCentre. The US minimaker this week acquired non-exclusive worldwide marketing rights to the GNC package which is in use at 180 sites throughout the world.

Two weeks ago Prime bought a version of Cambridge Interactive Systems' Medusa solid modelling package for an undisclosed but "substantial" sum, following the earlier purchase of the Locam process planning product from Maidenhead-based Logan Associates.

Prime already owns the rights to a number of CADCentre products, including the best-selling PDMS plant design system, following its takeover of Stevenage software house Compeda in 1982, and plans to integrate all its acquisitions into a unified CAD/CAM system.

The company declines to comment on either the price paid for GNC or on its plans for further purchases.

## DEC plans to spend nearly $20m in Ayr

by Nuala Moran

DEC IS spending $4 million on kitting out its factory in Ayr, Scotland, to make personal computers and micros. And it is likely that a further $15 million will be spent over the next three to four years on setting up a VLSI testing and a facility for dicing and repackaging silicon wafers.

"We're just at a decision point in terms of the plant because it was set up to do final assembly, and testing and technology is making this function obsolete," says Dave Lawrence, manager of the plant. "This is why we're looking for new roles in Ayr."

A pilot line for assembling the micro PDP-11 is already working and Lawrence expects to start shipping next month. Between 200 and 800 machines per month will be produced when production is going at full strength. There are also plans to make the Rainbow and the Professional in Ayr.

The VLSI testing is being set up at the moment and Lawrence is in the middle of getting approval for setting up dicing and repackaging facilities.

"Digital has its own semiconductor manufacturing operation in Hudson, Massachusetts. We've got contacts with people who work there and got approval to test semiconductors on behalf of Hudson. This has given us a foot in the door and we hope to move on to dicing and repackaging."

"At the moment we're waiting for approval for a design study to set up a dicing and repackaging operation and we hope to build something a year from now. The VLSI testing should be set up in the next four to five months."

VLSI testing is very capital intensive. Lawrence anticipates the $15 million estimate to be exceeded by the time all the facilities are complete. "Scotland has many advantages in terms of grants and infrastructure," he says. "All the things that are going on as far as electronics is concerned are very helpful to us in putting our hands up to get this work.

"To get this work we must show that we can produce things more cheaply in Europe than the Far East. We're in a good position in this respect. The grants help with capital depreciation, the infrastructure means we have local supplies, and being in the EEC means there isn't a duty barrier."

At the moment DEC has four plants in Europe with a fifth one going ahead at Valbonne in France.


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# Questions hang over new BT services

by Donald Kennett

KEY questions on new British Telecom services which are due to start this autumn remain unanswered.

Speaking at the Online Business Telecom conference in London last week, BT's chief engineer for national networks specialised services, Bill Medcraft, was unable to say how the provision of an 80Kbit-per-second digital PABX connection from September at £750 would affect the current £8,000 price of a 48Kbit-per-second leased connection to BT's Packet Switch Stream data network.

His colleague, head of strategy Arthur Orbell, was equally unable to give a clear position on how responsibility for faults on circuits that used facilities from both BT and Mercury would be handled.

Orbell is joint author with Mercury's circuit switching manager Steve Carter of a paper describing how closely the two organisations were co-operating on standards and interconnection arrangements.

Both stressed the key role of a proposed standard for signalling between PABXs – the DPNSS digital private network signalling system – but neither was able to confirm whether it would be implemented in BT PABXs such as the Monarch.

Medcraft fielded the question on pricing from his former boss Phil Kelly, who retired from BT last summer to become an independent consultant. Kelly said he needed to know because his clients were asking, but he admitted that he had been unable to get the question answered when at BT.

Medcraft said: "With the IDA (integrated digital access) package, there is scope for improvement in the tariff as the customer sees it. These are questions that are under discussion, but tariffs are intended to be based on cost."

Orbell said that responsibility for a composite BT and Mercury link would depend on the terms of individual contracts with customers. The most likely target for a complaint about a failed call would be the provider of the connection, he added.

This would put BT in the position of taking most of the complaints and then being able to blame the customer for introducing a foreign element into his network.

Joint-author Steve Carter was quick to react to this by saying that Mercury would take responsibility for any link in which it provided the trunk section, even if both ends were connected via BT-leased lines.

Asked about the implementation of DPNSS on Monarch, the BT speakers said that PABXs were now handled by a completely separate part of BT (BT Merlin).

Orbell said: "I have people working closely with the industry of PABX systems under development, but I don't expect the manufacturers to talk about them. I would just say that whoever is first to implement DPNSS will have a big advantage."

Medcraft gave details of the integrated services digital network (ISDN) that is expected to provide the infrastructure for the world explosion in information technology-based services. BT is to start pilot trials of the service in September, based on five System X exchanges in the London area.

Coverage will spread to Watford, Milton Keynes, Manchester and Liverpool by the first quarter of next year, and to 1,000 local exchanges in business centres all over the UK by the end of 1987. But early extensions can be made to wherever there is demand for its facilities.

Single line connections will initially operate at 80Kbps (80,000 bits per second), giving one 64Kbps digital speech or data channel, one 8Kbps data channel and one 8Kbps control channel.

## Germans get £770m

by John Riley

THE West German government last week formally announced its £770 million five-year programme to boost collaboration within the German information technology industry and between private industry and research institutions.

The new feature of the DM 3 billion programme is that to qualify for a 50% grant from the government for IT projects, companies must collaborate. This is taking earlier emphasis of the programme, which starts this month, is on applications for the market place rather than on fundamental long-term R & D.

"This is not just a case of spreading money around with a watering-can," says Günther Müller, director general of the European Business Machines Manufacturers' Association (Eurobit). "It is linked to strict conditions to combine industry and research and it is a completely new philosophy for us."

Müller added that the German Ministry of Research and Development had brought in outside consultants, Arthur D. Little and SRI International, to work out why government subsidies given to IT in the past had failed.

"They found that direct cash subsidies to single firms was a mistake," he said, "and that philosophy has been avoided this time."

According to Müller, DM 530 million is to go to users introducing IT into industries. That would include robotics and production techniques – "mainly for medium-sized companies".

About DM 160 million is to go CAD/CAM; DM 200 million to knowledge-based and expert systems; DM 160 million on to new architectures; DM 260 million to telecommunications; and DM 410 million to applications of optical technology.

The largest chunk of cash, DM 980 million, will go to microprocessor technology, comprising DM 180 million towards key components, DM 200 million for new electronic components and DM 600 million for sub-micron technology. A further DM 320 million is going towards micro-peripherals development.

While welcoming the move, Müller says that the cash is still not as much as he would like: "It is not tremendous compared with the Netherlands," he said.

"Nevertheless, the programme is very positive for the German computer industry, and we were consulted from the beginning."

*KOWALSKI . . . Pioneer of Prolog at London's Imperial College.*

## SPL award goes to Kowalski

by Philip Hunter

PROFESSOR Bob Kowalski's work on the logic programming language Prolog at London's Imperial College has won him the first SPL-Insight Award, to acknowledge "outstanding contributions to fifth generation computing".

SPL-Insight is a subscription club led by SPL International of organisations which want to keep up with fifth generation developments.

The award will be presented at the club's annual dinner on May 15, when Kowalski will give a lecture entitled "Software engineering and knowledge-based systems".

"Insufficient attention has been given to the potential impact of knowledge-based systems in general systems development," says SPL-Insight director Bob Muller.

"Arguably, this is the very area where we could lead in new generation computer systems."

Kowalski has pioneered development of Prolog, the logic programming language chosen by the Japonese as the root language for artificial intelligence.


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BUDGET ANALYSIS

"A very good Budget for a lot of service companies – almost all the measures are favourable" – Eyeions

# Lawson pleases and confuses

## Dave Madden assesses how the Budget affects the computer industry

IS it the Budget for "enterprise", as Chancellor of Exchequer Nigel Lawson, had it, or "irrelevant and deflationary", as alleged by the shadow chancellor, Roy Hattersley?

As far as the computer industry is concerned, it has proved something of a curate's egg.

First, the surprise. A dismayed managing director of a Lancashire textile firm charged Lawson, in a post-mortem on Radio Four's *Today Programme*, with "caring nothing for traditional manufacturing industry", and having a prejudice in favour of "the new service industries".

Yet any mention of information technology was conspicuously absent from Lawson's remarks, and from the financial statement that accompanied his speech.

But was it a Budget for information technology, from a Chancellor biased towards service industry?

The verdict from the various vested interests that make up the computer industry is mixed. According to David Broad, chairman of the BMMG and the Comart Group: "The Budget is one of mixed fortunes for the micromaker." Gareth Lewis, ICL's group finance director declares: "The budget is generally good for the company" and cannot be persuaded to find anything the matter with it.

Doug Eyeions of the Computer Services Association comments: "A very good Budget for a lot of service companies – almost all the measures are favourable, and it should add about £3 million to the bottom line of our members."

Neil Barton, an analyst with Manchester stockbroker Henry Cooke, Lumsden has been advising clients since the Budget that, overall, its effect is that there is less incentive to buy technology, but he adds "It's been very good for the securities industry – institutions and stockbrokers – their discretionary spending will increase and they are the major users of information. So the online information industry will benefit tremendously."

The measures which will have the most immediate and potentially far reaching impact on information technology are changes in business taxation and allowances. "The current rates of corporation tax are far too high, penalising profit and success, and blunting the cutting edge of enterprise", said Lawson.

Consequently, he has introduced a programme of progressive reductions. In the year just ending, on which tax would normally be payable in 1984/5 the rate will be cut from 52% to 50% and by 1986/7 the main rate of corporation tax will be 35%.

In effect these cuts aren't entirely good news for high technology companies. Robert Miller-Bakewell, of Edinburgh stockbroker Wood, Mackenzie points out that there is an enormous discrepancy in the historic tax charges of leading companies, and only those with high actual tax burdens will benefit. Phillips & Drew estimates that Cable & Wireless, Ferranti and Thorn-EMI will all suffer a 10% loss of actual tax earnings, whilst Plessey and GEC would both be some 12% to the good.

Amongst systems houses, James Dodd, of Fielding Newson-Smith says: "Some firms in the sector have been very heavily taxed, Systems Designers was paying 52% until last year, and naturally will benefit."

The price of the fall in corporation tax has been a restructure of capital allowances. Lawson's contention is that "over virtually the whole of the postwar period there have been incentives for investment in plant and machinery . . . but there is little evidence that these incentives have strengthened the economy or improved the quality of investment."

His amendments are designed as a shift from indiscriminate subsidies for industrial investment to low tax rates for businesses of all kinds, whether they invest in capital or not, to encourage positive investment rather than tax shelter.

But all that has stuck in the industry's throat. David Broad again: "The abolition of 100% first year allowances on capital investment and its reduction by stages to 25% per year . . . at a time when every financial incentive possible ought to be used to encourage investment in the new technologies is a bitter blow." Broad believes that it will particularly hit the fast growing computer manufacturing company. And Barton agreeds in principle: "Withdrawal of these allowances obviously reduces the incentive for people to buy assets," but adds: "Whether there will in fact be an impact or not is debatable – there are so many other factors in play."

Paradoxically, the fact that tax reliefs still apply at 75% to March 31, 1985 could act as a catalyst. ICL's Lewis says: "As capital allowance cuts will be phased in, there will be an acceleration of investment decisions, and ICL expects an increase in sales."

Even Broad sees an opportunity: "There is at least one year of investment incentive – buy British micros now and don't leave it until next March."

But the changes in capital allowances have had one conspicuous effect – the whole of the British leasing industry is thrown into chaos. There seems to be no doubt that the £3 billion industry will contract. The controversy is whether the specialist leasing companies, including the computer leasing outfits, will suffer as much as the banks and general equipment lessors.

By buying equipment themselves and leasing it out, banks have qualified for capital allowance to set against their thumping profits. Though they pass some of this on to the lessee, it has still boosted post-tax profitability by around 10%.

Ashley Mitchell, managing director of United Leasing, is confident that the changes will "deprive the clearing banks of their competitive edge", and "break their stranglehold on the leasing industry". The effect of reduced capital allowances and reduced rate of corporation tax will rapidly diminish the benefits on banks' taxable profits.

Mitchell insists that United's business is radically different from that of the banks – supplying selective computer equipment and not merely arranging lease finance. He adds that with the introduction of the 100% allowance in the UK, computer users have preferred to purchase rather than to lease, and so now the leasing option becomes all that more attractive.

But the market remains to be convinced. United's main rival Atlantic Computer has been marked down some 40 pence since the Budget. Although Dodd agreed that banks may fall out of the business, with it contracting into specific traditional leasing areas, Barton said that all leasing companies were on thin ice; and he would not be surprised to see Atlantic diversify further.

The National Insurance Surcharge, what Lawson describes as "this tax on jobs," introduced by the Labour government in 1977, has been abolished. That has been welcomed uniformly. Broad points out that in effect it reduces payroll costs by 1% from October. Eyeions estimates that in the relatively manpower intensive service industry it would add ½ of 1% to profit margins. Dodd calculates that a company like Logica might save £100,000 per annum.

The Budget has proved satisfactory for small high-tech companies, too. Small business corporation tax is down from 38% to 30%. Eyeions was relieved to find the Business Expansion scheme continued.

As far as the BMMG is concerned, David Broad views change to the treatment of value added tax on imported goods as the most positive aspect of the Budget for British micro makers.

LAWSON . . . IT remarks absent.

"Changes will break the banks' stranglehold on the leasing industry" – Mitchell


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BCS/COMPUTER WEEKLY LECTURE

John Riley reports last week's Gordon Bell delivery to the BCS and below profiles Bell's new company, Encore

BELL . . . "Japanese threat makes good copy."

# Have the Japanese panicked the West?

THE Japanese fifth generation programme is just a creative dream vision which has helped Japanese researchers siphon off ideas from the West. And the West has been unduly panicked into believing a revolution is around the corner.

Those views were expressed by Gordon Bell last week at the second annual British Computer Society Jubilee lecture, sponsored by *Computer Weekly*. Bell, who until last July was Digital Equipment Corporation's vice president of engineering and is now a vice president of the novel new US company Encore.

Defining the fifth generation is "one of the most fabulous games around," Bell says.

"There is a lot of public relations involved. The concept of the Japanese threat makes good copy and is a way of getting money drummed up for computer science." But he adds that by publishing a plan and capturing the West's imagination, Japan has also captured the West's ideas on that plan. "It is interesting to watch how it engaged us to get out and build something that could really understand natural language."

"There have been so many critics of the Japanese plan that the Japanese will have learnt from it. They probably have a really interesting plan now," he says. Bell also believes that the fifth generation idea has "detracted us further from engineering and manufacturing by getting us to believe in the magic of revolution."

He recognises that there will be spin-off for the Japanese – "by products from far-out goals" – and that they stand to learn a lot about knowledge engineering and other artificial intelligence based to solve the problem of parellelism. But he firmly denies that the fifth generation is revolutionary.

The revolutionary view, he says, holds that there will be voice and natural language communications, deep expert systems and programs that learn, fast wide area networks, ultra and very large scale integration and parallelism and "avant garde organisational co-operation between research and industry".

"But it is not revolutionary because it needs models of history to build on," he argues. A major stumbling block will be telecommunications: "We need faster wide area networks," he explains.

"One of my greatest worries is that the evolution of telecomms for computing is abysmal. The rate was 300 baud in 1965 and it has only risen to 1,200 baud in the 1980s. If you believe things, some day we'll have a 64 Kbits rate as standard, but I'm sceptical of getting good communications."

Bell is most disturbed not by the Japanese fifth generation, but by "Japan's decision to access the world's software by ignoring the copyright law – that is most worrying," he says. He was referring proposed charges in Japanese law which could give it rights to Western software (see page 2).

Bell is also concerned about the growing gulf between engineering and science in the West. "Computer science is closely bonded with software engineering, and there are some links between artificial intelligence and knowledge engineering. But the links between knowledge engineering and software engineering are tenuous."

# Encore sounds good for Bell

MARKET driven companies is the current catchword in the UK. But Gordon Bell, chief technical officer at Encore Corp, believes that technology should lead the way.

Encore, the company started in the US last July by heavyweights from the minicomputer sector, brings a new concept to the industry. It aims to found and foster companies to build significant new products, while at the same time not stifling their technical creativity.

Encore intends to do that by giving them freedom to be product driven rather than market driven, while providing them with an external marketing organisation to take the burden of sales and distribution off their shoulders.

This idealistic sounding venture is run by a group of hard nosed supremos each of whom played key roles in shaping the course of three successful minicomputer companies in the 1970s. They believe that venture capital companies have failed to help start-up companies develop their technical directions, and intend the aptly named Encore to do just that.

Encore is headed by Ken Fisher, who took Prime from a $7 million company to a $350 million company. Reporting to him are a team of vice presidents which includes Henry Burkhardt, one of Data General's three founders who had architected the Nova minicomputer; Gordon Bell, Digital Equipment Corporation's vice president for engineering; "Chuck" Casale, formerly Prime's director of corporate development who had earlier helped build, Control Data's CDC 3600 computer; and several other top calibre people.

Currently occupying 5,000 square feet of office space in Framingham, Massachusetts, Encore was started with $1 million capital put in by the founders.

Bell outlines the company's philosophy: "The formal venture capital way is not the way to succeed for technical companies. It works for some companies, but not for those founded on the basis of a technology or a product, because they bring in field-oriented and marketing people which causes general conflict. These companies, as a result, rarely make it.

"Our goal is to have excellence in both camps. Product companies should not have to be in the selling business – it's hard enough to make the products. Our product companies have engineers, manufacturing and basic marketing, but not distribution and service."

Encore has about 15 top staff. Fisher heads the team, and directly under him is the board of about eight vice presidents. Below them is the Encore Sales Company, which currently consists of a group of six executives, headed by George Dudley, formerly a Prime vice president.

The Encore Sales Company is a high powered marketing and sales umbrella organisation, which takes the strain of those activities away from the product companies which for the moment are wholly owned by Encore. Each produces a separate product, and Bell is responsible for evaluating potential product companies and Encore's product needs. There are typically three members of the nine Encore board on each of the product company's boards.

"We don't want dull products," says Bell, "we're not interested in any products that doesn't mean two steps forward for that kind of product – it's not worth bothering otherwise."

At present there are four product companies, three hardware and one software company so that the whole Encore organisation comprises about 100 people. The only one with a product so far is a software company called Foundation, which is based in North Carolina. That was started on November 1 and produces a fourth generation language called Ally.

Another of the product companies is called Hydra, while the other two have not yet been announced. Bell expects the first product for two of the companies to be launched by the end of the year.

He would not discuss what the proposed products will be but did say that they are micro-based – "because the technology is here" – and that there will be a "strong compatibility focus on existing standards". Encore is currently negotiating to raise more cash, but there are no details yet.

Bell explains that Encore aims to give its selected start-up companies a better chance of survival than start-up minicomputer companies had in the last decade. "Between 1967-1972 about 100 companies began minicomputer efforts," he says, "only six survived long enough to enter and defend themselves in the current microprocessor sweepstakes. Of the 50 start-up companies among them, only two, Data General and Prime, really made it."


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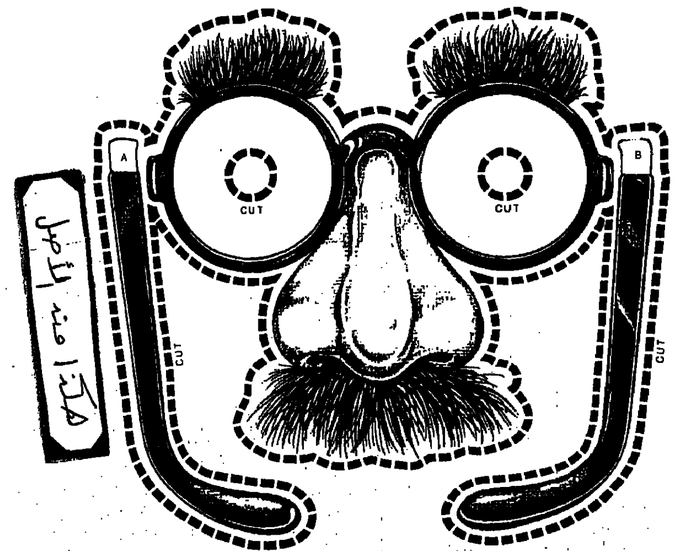


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**LEIPZIG FAIR**

### Will East Germans pay one-and-a-half times their monthly salary for a home computer? John Kavanagh reports

# Iron Curtain countries unveil their first home computers

EAST Germans were introduced to home computers at the Leipzig Fair last week when their country's two main computer and electronics organisations launched eight-bit machines costing more than one-and-a-half times the average monthly salary.

The machines, from Robotron and Mikroelektronik, are based on the latter's U880 processor chip, which is compatible with Zilog's ancient Z80. Mikroelektronik claims that its home computer can address up to eight megabytes of memory directly. It has patented the addressing method and is tight lipped about it.

Robotron's Z9001 costs £400 for a 16K system with no software and excluding the television display. The average monthly wage in East Germany is around £250. Highly qualified people such as university medical school lecturers earn around £370.

"The Z9001 is not expensive and the price is acceptable," said sales executive Klaus Lorenz. "There will be no problems selling it."

He says Robotron will build anything between 100 and 1,000 in the first year, but after that sales will move quickly into thousands a year, boosted by the East German government's plan to put microcomputers in schools. Certainly there was huge interest from East Germans at the Leipzig exhibition.

The processor and keyboard are contained in one unit, which can be attached to a standard television set. It displays 24 lines of 40 characters to provide crude, viewdata-type colour graphics.

The memory can go up to 64K. Cassette tape and floppy disc interfaces are available but not communications. There are plans for a printer for October, when the Z9001 will appear on sale in high street shops.

Little software is available. It includes an 8K Basic interpreter, supplied on cassette tape or as a plug-in module, plus an assembly language. There is also a package to teach users how to operate the machine and how to program in Basic.

Robotron expects to have 70 programs ready by October. It insists the operating system is not similar to Digital Research's CP/M, which became virtually the standard Z80 microcomputer operating system in the early days.

Lorenz said Robotron would not try to sell the machine in the West. "We have a huge need for consumer goods and we will manufacture for that need," he said. "Besides, western markets are already full."

> **"We have a huge need for consumer goods and we will manufacture that need"**

The Mikroelektronik HC900 home computer also plugs into a colour television. It costs around 10% more than Robotron's machine. It will be sold through RFT shops, which sell televisions, radios, tape recorders and so on.

The HC900 processor is in a box measuring 10 inches by 11 by three inches deep. The keyboard is connected to it by a five-metre cable. Memory starts at 32K and be built up in 64K chunks – each in a similar box to the processor – to eight megabytes.

Development engineer Uwe Buckner said the eight-bit processor could address the eight megabytes in microseconds, without using peripherals.

A cassette player, light pen and joystick are the only peripherals available now. Plans include floppy discs, speech output and analogue-to-digital converters. The HC900 can already produce five octaves of music.

Again Basic, an assembly language and an operating system – Mikroelektronik's own – are available. Buckner said extended Basic and the Logo learning language would be provided later.

Both organisations see the home market as the main one in a country where consumer durables are in short supply.

Mikroelektronik also introduced what it claimed was a world first. Its Quantity Processing Computer is a microcomputer which converts measurement units from one to another and does calculations on them.

For example, if a user wants to add three metres and four inches together the machine converts the inches to produce the answer of 3.101 metres. Over 100 units, ranging from gallons to pennyweights, minutes and volts, are stored in the 8K memory.

With unaccustomed marketing hype for an East German, the machine's inventor, Alexander Spitzner, said: "The first breakthrough was the pocket calculator. The second was a calculator with mathematical functions. The third was the programmable calculator. And this is the fourth breakthrough."

He added: "We have examined 8,000 patents and found no similar device. We have patented the machine in the US, the UK and elsewhere – and we are looking for solid partners among western companies."

He said the main application was the extension or construction of scientific and technical calculators and desk-top computers and related products in measurement and control.

The computer is the size of an A4 pad. It has a full alphanumeric keyboard and a 16-character display. It is based on the U880 processor.

East Germany was not the only communist country to launch personal computers. Videoton from Hungary launched the SLK-80, also based on the U880, but this time with a "superset" of CP/M version 2.2.

Videoton, probably the most outward-looking of the east European computing organisations, hopes to sell the system in the West. It costs $3,000.

Videoton offers Hungarian-built peripherals with the SLK-80, including 3.25-inch floppy disc drives with capacities of 200,000 characters.

The system can support four drives. There are eight expansion slots; serial, parallel and modem interfaces are available. Programming is in Basic and assembly language and Pascal is on the way.

> **"We have examined 8,000 patents and found no similar device. We patented the machine in the US, the UK and elsewhere"**

The machine will be aimed at the office and industrial markets rather than the home.

Meanwhile the Czech organisation, Kovo, launched a minicomputer compatible with Digital Equipment's PDP-11/60, another western machine which is getting on in years.

The CM1403 is made from processor components and 16K memory chips built in Czechoslovakia.

It can support 29-megabyte disc drives and five-megabyte cartridge disc units, all from Bulgaria.

Two Bulgarian tape units with densities of 800 bits per inch were also connected. Next year Kovo will introduce its own 12-megabyte cartridges.

"The discs are getting better – but they are not up to DEC's standard," said a Kovo representative.

He said the machine was 100% compatible with the PDP-11. It runs operating systems similar to DEC's RSX-11M and RT-11 and there are links for DEC's Decnet. The Czechs are working on a machine which will be compatible with the 32-bit DEC Vax.

Elsewhere Robotron saw off the last of its paper tape-based office systems with the launch of the K1715 office computer and accounting system.

It again features the U880 processor – this time with an operating system compatible with CP/M, giving users access to the 4,000-odd applications packages believed to be available for that system.

The K1715 also has 5.25-inch floppy discs with capacities of 120,000 characters, plus communications.

Robotron expects to export the machine to the West, where it has had some success with its earlier office systems.

Robotron's main emphasis was on turnkey systems based largely on its own DEC-compatible minicomputers.

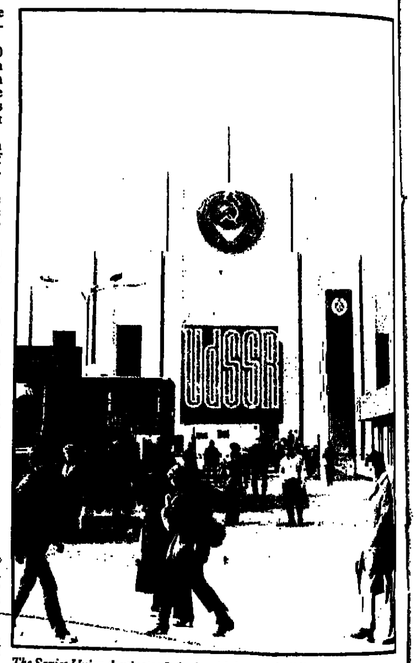
On display were image processing and computer-aided design systems. They were aimed especially at the export markets, mainly communist partners and developing countries.

Lists of Leipzig Fair visitors, displayed publicly, included officials from Cuba, Latin America, Africa and the Middle East, including the Palestine Liberation Organisation.

Rudiger Sobe, director of Robotron Export-Import, said the organisation exported over 70% of its production, almost all to "socialist" countries. A recent contract with the Soviet Union, worth £45 million, involved over 100 big mainframes in the next year.

The Soviet Union is said to produce the biggest mainframe in the IBM-compatible Eastern European range.

As usual it had a small cardboard model of such a system displayed on its stand.




*The Soviet Union dominates Leipzig with its own building.*

*SPITZNER . . . "And this is the fourth breakthrough."*

*Hungary's personal computer, the Videoton, may reach the West.*



**SOFTWARE FILE**

# Hopper backs the database answer

THE back-end database machine has a great future, according to computer pioneer Commodore Grace Hopper of the US Navy Reserve.

Hopper, author of the first Cobol compiler and now aged 78, gave a 1½-hour lecture at Thames Polytechnic last week at which she held her young audience spellbound.

Her theme focused on the growing need for large volumes of accurate data which was even outstripping the availability of computer power. She argued that the database machine could be the answer to many of the problems now confronting the industry.

"We need more power but we can't go on building machines the same way," she said. "We can build systems of computers, as you don't need to run all your applications on the same machine."

Bell Labs had first got the idea of a separate database machine in 1972, but no-one had paid any attention, she said. In 1980, the first one had been demonstrated at the National Computer Conference at Anaheim, but few had even noticed it. Two years ago, the US Navy had installed its first which had been very successful. The second would be installed this summer.

The concept was important for data security, she said. "We're doing very poorly at protection of data so far, and multiple databases may hold the answer."

She described how computer power had increased thousands of times since she helped to program the first large-scale computer for the US Navy in 1944. Yet the demand for data was increasing at a faster rate for calculations like weather forecasting and monitoring of water supply.

Hopper argued that there was an equal need to re-assess the value of data presently being stored.

"We've spent 30 years fascinated by blinking lights and not considering the quality of our actual information. We have also totally failed to look at the possible cost of storing incorrect data."

She recalled being told by the US Navy that she was too old to join at 40 but had refused to be deterred.

She had this message for the young people of the British computing community: "Go ahead and do it! It's much easier to apologise than it is to get permission."

*HOPPER . . . "We've spent 30 years fascinated by blinking lights."*

# MSA puts Q-Pac into Safe hands

by Claire Gooding

MSA has granted Safe Computing exclusive rights to sell the ICL version of its Q-Pac payroll and personnel package.

The move leaves MSA free to concentrate on its IBM market. It will hand over responsibility for ICL maintenance, sales and future releases to Safe.

The package, one of the front runners in its field, has been redeveloped since MSA acquired it in 1979. It has about 140 users in the UK, about half of whom use ICL hardware, and has its own user group.

Safe intends to expand Q-Pac's target machines to include the entire ICL range and push ahead in implementing an online version of the system. Safe specialises in ICL software and is best known for its factory and production packages.

It was MSA that made the first approach with the aim of off-loading its ICL software onto an ICL expert.

"Our policy is that it is not wise to dilute resources," says MSA's UK managing director, Dan Schmidt. "To make the most of our R & D, we focus on IBM development. It's virtually impossible to keep abreast of all hardware versions: the only way to do that is to go to the experts.

"We move the IBM version forward and pass on the benefits to implementors on other hardware."

MSA has similar agreements for Q-Pac on Univac, Honeywell, and NCR hardware. Safe was chosen for the ICL contract partly because there was no conflict of interest in the applications it already sells, and partly because it was already a user of the product with in-house expertise.

Safe is thought to have committed a lot of time and money to the project and will pay MSA royalties for sales and maintenance charges to existing users.

# Lex spreads its wings

by Claire Gooding

ACE Microsystems is venturing out of the DEC fold with its Lex word processing package. The product will be made available on a wide range of machines and operating systems, including the 68000-based Wicat under Unix, on the IBM-PC under PC-DOS, the Digital Equipment Rainbow, Perkin-Elmer's 32-bit machines, and all CP/M Z80-based micros.

The package was developed for the DEC PDP-11 and it has sold well in the US, providing Ace with revenue of £120,000. The company, turning to OEM deals, has also signed with Perkin-Elmer for the word processor to be supplied on its hardware.

"We realise the market has changed," says marketing director John Irwin. "People are selling through distributors and everyone is looking towards the personal computer as the vehicle of the future.

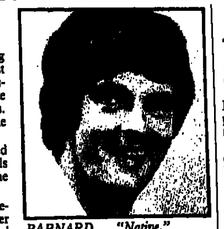
"We see large companies buying the personal computer as the most significant market for Lex. We estimate that over half our income will come from large customers. Already, half our licences come from overseas."

Ace has emerged unscathed from the long court case with rivals Filetab Support Services over the ownership of its D language.

The rights to D now seem secure, which is a relief to founder Tom Barnard, since D is a vital ingredient in his word processor's flexibility.

"The fact that D is a portable language means that we can use it as a native code generator. It becomes comparatively easy to port to other machines," he explains.

The arrival of Lex under Unix brings new competition to the well-established British word processing packages such as Redwood's Uniplex, based on the original Lex 11 package, and Precision Software's XED.



*BARNARD . . . "Native."*

Lex has the advantage of already having a large installed base among DEC and micro users and it has been developed well beyond most word processors.

It includes sophisticated facilities such as an in-built calculator for figure work, and the ability to merge figures and text from database files.

# ACT chief slams IBM and Lotus tactics

IBM and Lotus Development Corporation have come under fire for their software tactics.

At the Computer Trade Conference held at Wembley last week, both the industry leader and the best-selling micro package author were criticised by Ian Wallace, technical director of ACT, IBM's principal micro rival in the UK with its Sirius and Apricot machines.

He accused Lotus of "arrogance" in delivery of a package (1-2-3) to run on only one machine (the IBM Personal Computer).

"People should not have to go into a shop and be told that this application only runs under that operating system or on that hardware," he claims.

The industry and IBM in particular are not really giving what the user wants, he says. A move towards a standard environment is now essential.

"Personal computing in the USA is IBM-paranoid and this is stifling innovation," he claims.

It is crazy to have to buy a different word processor for each operating system. IBM is a closed system and people are locking themselves into it, he complains.

■ In an after-lunch speech, communications expert John McNulty of McNulty's Interchange predicted that parallel processing and optical computers would be the next two great advances.

"We have got to go for parallel processing in a massive way," he urged. Optical computing still seemed very far-fetched to most people in the trade, he said, but it was less distant than imagined.

# Philips picks US database

PHILIPS Data Systems has announced that its standard database for the successful 3000 series is to be the US-written FMS-80. The database, written by David Rodman of DJR, is the subject of a three-way deal between Philips, Rodman, and DJR's distributor in the UK, Panoramic.

Philips is the first European manufacturer to have adopted FMS-80 on an OEM basis, although the system has been available in the UK for some years through several distributors. At one time, it was front runner in the micro database stakes, but it was overtaken by other contenders such as Ashton-Tate's dBase II (see story this page).

"The deal with Philips is the first step in a more aggressive marketing policy for DJR and Panoramic. "Obviously the fact that FMS-80 runs on TurboDos, the multi-user system already used by Philips, has helped a lot, but it was far from being the only factor," said David Warren, managing director of Panoramic Computing.

According to Warren, the main reasons why his product came to the top of Philips' shortlist were its flexibility, its ability to generate custom-built reports, and the fact that it can be used as an end-user tool as well as a development language for experienced programmers.

The system recently won a competition sponsored by *Computer Weekly* and Computer Automation to code a flowchart for updating a record in a multi-user system.

FMS-80 started with advantage that David Rodman originally designed and wrote the system to run with TurboDos, written by Mike Bush.

According to Warren, an implementation of FMS-80 for the multi-user Unix operating system is on the cards, and it will not be long before he writes a version of the Unix language C.

"David Rodman is one of the few real Unix experts around" says Warren. "He was giving lessons in C back in the 1980s, and knows Unix very well. He should have the version ready by the end of this year."

Philips is to make the database a "Category 1" product, which means that it gets the Philips seal of approval after extensive in-house tests. Peripheralia will be handling the support itself.

Other major users include the Midland Bank, Currys, Hambros, and the colleges of Oxford University, which are buying the system for their administration.

The product sells for £395 for a single user licence and £495 for the IBM-PC implementation, with £595 charged for a multi-user licence.

*WARREN . . . "David Rodman is one of the few real Unix experts around."*

# Ashton-Tate moves to multi-users

by John Kavanagh

MICROCOMPUTER database leader Ashton-Tate has taken its dBase II system into the multi-user market with a version to run on Ethernet local networks.

The US firm, which has over 150,000 dBase II users worldwide, is developing versions for other networks and multi-user operating systems.

These moves come as the company faces strong competition from more recent entrants in the micro database market.

After the Ethernet version will come models to run with the multi-user MP/M-86 and Turbo-dos operating systems. Further away are versions for other local area networks, including Omninet.

But Ashton-Tate denies these developments are a response to competition. "It's a natural progression," says UK customer service manager Joan Chesney. "It's something the users want."

She says there is "massive interest" in the new version. There are over 10,000 dBase II users in the UK.

The UK price is around £700 for the first four terminals and £300 for each extra group of four. The single-user dBase II costs £437.50.

The Ethernet version runs with Microsoft's MS-DOS operating system. It includes record locking, file locking, queueing and passwords for private, shared and public files.

Private files can be accessed only through a particular terminal and password. Any terminal can access a public file but not write to it. Shared files can be read and written to by any terminal with the right password.

Maximum database size is 65,345 records, the same as on the single-user version. The original dBase II was introduced in 1981. It runs under CP/M and MS-DOS.

# Tools are re-launched

INFORMATION Technology Ltd, the Hemel Hempstead fault-tolerant supermini maker, is to introduce new software tools to help boost programmer output.

It has completely re-written its transaction application driver (TAD), which was originally developed in the mid-1970s and will re-launch it in July as the transaction management system (TMS). The software was demonstrated to the company's southern region user group last week for the first time.

TMS is aimed to let programmers design their own screens more quickly and easily. Its predecessor derives from the days when interactive systems were a new invention, and the 300 clients of Information Technology have been pressing for more modern and more user-friendly facilities. The re-write is said to take full advantage of the 32-bit architecture.

More than half of these users are systems houses writing applications to run on the CTL Momentum 9000 range of machines. The others are mainly data processing departments of customers in the manufacturing, financial and health sectors.

Persuading these to adopt TMS will be crucial, says Information Technology's market development manager, Roger Fulton.

As most of the users will already have spent some £500,000 on buying and enhancing their systems, the extra £15,000 to £35,000 for the new tool may seem a logical step rather than an extravagance, he argues.

Two weeks ago, the group announced a structural shake-up, with subsidiary CTL being merged into Information Technology Ltd. Last year, the group had links with several software houses.

# Torch takes a shine to Unix

TORCH Computers has invaded the Unix market.

The company has signed an agreement with Pipeline, a member of the Tamsys group, to provide applications to run on Torch machines under Unix.

Torch recently launched its own Unix-based machine, the 725, and the Unicorn BBC micro hard disc pack, both tuned to Unix System III.

Pipeline will tailor a range of Unix applications to run on Torch machines, including Redwood's word processing package Uniplex, accounting and payroll systems from Computer House, and the Complete Manager from Alternative Business Sy[illegible]

*Software File is compiled by George[illegible]*

# Timex spreads its wings even wider

by Nuala Moran

SCOTTISH subcontractor Timex is spreading its net. It is best known for building Sinclair's ZX81 and Spectrum micros, but now plans to add further Sinclair machines and electronics products for other companies.

Last week it announced that it will start making the Sinclair Microdrive at its Dundee factory later this month, and managing director Barrie Lawson says that Timex will be moving to other markets including telecommunications and computer peripherals to widen the company's base. He claims that Timex is on the verge of securing three contracts worth several million pounds in these areas.

Lawson also expects to be making Sinclair QLs later this year. But he is not sorry that Thorn was Sinclair's first subcontractor. "In working with Sinclair it is to our advantage to have volume rather than the problems of new products. We have got the better part of the deal at the moment because the Spectrum is the bread and butter," he remarks.

"Demand for the Spectrum in 1984 has held up to the pre-Christmas level which is almost unheard of in the UK. At the moment we are producing as many Spectrums as we can."

The one millionth Spectrum came out of the factory last November and Lawson says Timex is on the way to the next million.

But Lawson also warns that Sinclair had had problems with chips and this had held back production. He believes "we could have made about 20% more than we did if we had more parts. And Sinclair could have sold them."

Timex is also producing the cathode ray tube for the Sinclair flat screen television. Lawson denies problems at the factory held up Sinclair's production. "We're giving Clive all the tubes he wants at the moment," he says.

"I'm not quite sure why he hasn't got the market flooded with TVs."

Over the past 18 months Timex has completely restructured the Dundee factory and the company has "turned the corner", according to Lawson. "We went through some painful periods last year when we were much in the news. The main problem was restructuring from mechanical to electronic production, and we're over that now."

Staff at the factory were cut from 4,300 to 1,800 and Lawson has withdrawn the threat of enforced redundancy. "We have reached an agreement with the unions to put the customers first and there is a new spirit of co-operation."

Timex now wants to recruit engineers and technicians to expand research and development efforts.

## Taiwan business comes to UK

TAIWAN-based multinational Tatung has brought its PC2000 business micro to the UK. The Taiwan built eight-bit machine — which uses a Z80A processor — is the first microcomputer Tatung is selling here.

But the company's UK factory in Bridgnorth, Shropshire, already manufactures monitors, and a home micro to be launched next month will be built there. The Bridgnorth plant was taken over from Decca three years ago.

The PC2000 weighs in at £1,699 for a system with twin floppy drives, black and white monitor and keyboard. Options include eight-inch floppies, hard discs and colour.

A "Software Bundle" comes with the computer, and includes general business accounting software.

The machine runs under the CP/M operating system, and there are over 300 Tatung-approved packages available.

Tatung was founded in 1918, and builds products ranging from robots and automated production lines to colour televisions and audio equipment.

SHIRLEY . . . *Wanted to inject humour.*

## Enterprise is delayed

by Philip Hunter

DEVELOPMENT of the "Enterprise" home computer, to be made in the UK and due originally for launch this spring, has been delayed while the manufacturer has been sorting out what to call itself.

The machine will not now appear in the shops until the autumn, and at a slightly higher price, £199 plus Vat, rather than £199 inclusive of Vat as promised.

The maker of the machine had tried last summer to register under the name "Elan", but an injunction was served by Elan Digital Systems, a UK maker of EPROM programmers, to prevent the use of the name.

The company took the temporary name "Flan", trying in the words of marketing director Mike Shirley to "inject a little humour into the situation." But now the company has managed to register under the same name as its product: "Enterprise Computers."

"We are confident now that this is the end of a saga that has lasted 90 days," says Shirley.

Pre-production models of the Enterprise will be available to UK software houses in the late spring, says Shirley, and several 1,000 machines will be ready for the shops in September.

The aim is to make 150,000 machines by the end of the year to compete with Commodore, Dragon, Oric and Sinclair, in the market for "second generation" home computers for people who either already have a machine, or already know the basics.

The machines will initially be made by Welwyn Electronics, although Shirley says that the company will be looking for two or three other manufacturers as well if demand is as great as hoped for.

Two models will be launched, one with 64K memory, the other 128K, and the plan is to offer the Sony 3½-inch microfloppy drive.

## Zilog goes for micro Unix users

by Philip Hunter

ZILOG has made a pitch for users of Digital Equipment and Data General Unix-based micros with products that enable their software to run on Zilog's system 8000 range.

The company also announced a new mid-range model for the 8000 series, the 11-Plus, for £14,600 at last week's Computer Trade Show, in the Wembley Conference Centre.

For DEC users, the company launched Softbol, developed by Software Ireland, and Sibol, from Omtool, to enable software developed under DEC's Dibol-83 to run unchanged on the 8000.

The company announced a Cobol compiler called Ace, which allows Unix-based Cobol programs developed with Data General's Icos implementation of the language to run unchanged on the 8000.

Ace, developed by Austee of the US, costs £690.

The company hopes to attract wavering DEC and Data General users to seminars on March 27-29 to convert them to Zilog. UK sales and marketing manager, David Bethel, says that the reason for changing to Zilog is simple: the machines offer the same facilities for less.

Users can start with the 11-Plus for £11,600, with 33 Mbytes hard disc capacity, and extend up to 128 Mbytes by spending about another £5,000. The new Model 11-Plus offers up to 66 Mbytes, filling in the middle of the range, according to Bethel.

Zilog's 8000 machines are offered to software houses under the Referred Software Vendor Programme (RSVP). The scheme allows companies to buy the Models 21 and 31 at 50% discount, and the Model 11 at 40% discount, if they can supply and support software of potential value to users.

Bethel says that the programme is aimed especially at fledgling software companies to get them quickly into the Unix market.

Zilog also markets the 8000 models through OEMs including sister company Exxon Office Systems, CAP and Computerplan.

## DEC opens European shops

by John Kavanagh

MICROCOMPUTER shops are being opened across Europe by the world's number two computer company, Digital Equipment.

The US firm announced its first shop in Geneva last summer, and since then has added stores in Zurich, Copenhagen, Brussels and Utrecht. This year it plans to open five or six more in Switzerland, Sweden and Finland.

The UK is also being considered for a shop. So far, DEC has been encouraging big UK companies such as BP to set up their own "shops" to introduce microcomputers to their staff.

A DEC spokesman said that the Geneva shop is more successful at selling the company's micros than all other sales channels in Switzerland.

The company describes the shops as business centres providing consultancy and advice to customers who know a little about computing and have virtually decided on a DEC machine.

But recently, there has been a trend towards walk-in shoppers who pop into the shops in the same way as they go for a look round a general computer store.

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## Memcom comes out of the red

MEMCOM International Holdings, an electronic filing systems company traded Over-the-Counter by Afcor Investments, made £94,000 pre-tax in the six months to October 31, compared with a loss of £32,000 in the seven months to April 30, 1983. The company turned over £1.37 million in the period. Memcom says it is confident of exceeding its profit forecast of £610,000 for the year.

## Combined loss

COMBINED Technologies (Comtech) reports increased losses in its third quarter to December 31 and Mnemos, the USM listed document storage and retrieval systems company, in which it has a 63% stake was again the culprit. The loss for the period rose from £1.66 million to £2.09 million, lifting the nine-month deficit from £3.06 million to £3.69 million..

## Televideo rises

FIRST quarter income at Televideo Systems, a personal computer and terminal maker from Sunnyvale, California, rose 17% to $5.7 million on sales up 11% at $43.2 million compared with the corresponding period in 1983. The company says shipments were flat but orders reached record levels.

Chairman Philip Hwang comments that demand for the company's products exceeds supply and will continue to do so for another nine months.

HWANG . . . *"Demand exceeds supply."*

## ITT improves

ITT, the US-based electronics multinational has reported improved fourth quarter and full year profits, but the figures were affected by an accounting change which has led to the restatement of earnings in 1982. The 1983 fourth quarter net profit rose 13% to $278 million from a restated $245 million, and turnover was ahead 4% at $5.5 billion. In the full year the company saw profits up 2% at $675 million, but turnover slipped 5% to $20.2 billion.

## Kode falls

KODE International, electrical equipment maker, and one of the first computer companies to be publicly quoted in the UK, saw 1983 pre-tax profits fall to £1.12 million from £1.37 million a year earlier. Kode had warned late last year of production problems at its Kam Circuits subsidiary, and the stock market was relieved to find the damage no worse than 17%: the shares hardened 5p to 280p on the news.

Turnover at the group was up 11% to £12.5 million, and a reduced tax change means net profit was ahead 3% at £702,000.

# Zealous investors grab new shares

INVESTORS have fallen over themselves to get a piece of the action in Systems Reliability's Stock Exchange listing. Its offer for sale was 96 times oversubscribed, attracting applications worth almost £700 million for shares valued at just £7 million.

The company makes telephone monitoring systems for PABXs and does computer maintenance. The offer of 25% of its equity at 270 pence per share valued it at £28.4 million.

On the basis of pre-tax profits for the year to December 31, 1983 of £2.04 million, the actual tax price earnings ratio is 22. The company has managed an 80% rise in profits each year since 1979, and turnover has improved from £2.3 million to £8.2 million in the same period.

Systems Reliability was formed in 1968 by its present chairman, Harold Allsop, as a pioneer of third party maintenance. At present that business in the UK includes 1,700 contracts with 1,000 customers. It looks after products from the likes of Alpha Microsystems, Altos, Apple, Micro Five, and Sanyo Business Systems.

But in 1983 maintenance income accounted for only 30% of the group's turnover, and of that 7% came from maintaining Systems Reliability's own kit.

So the company's emphasis has changed. Since 1979 sales of its own systems have grown from £1.09 million to £5.78 million. Its products are marketed under the trade name TEL-TAG, and have British Telecom approval, as well as that of other European PTTs, including the French.

But neither Systems Reliability's trading record nor the high tech tag can explain the enthusiasm that has greeted its flotation. Certainly DPCE gave the stock market a taste for computer maintenance last year, but the crucial attraction was the decision by Barclays Merchant Bank and stockbrokers Phillips & Drew, Systems' handlers, to go for a fixed price offer.

Last February an offer of shares in chemist chain Superdrug was wildly over-subscribed to the embarrassment of its sponsors. That inspired a spate of tenders for the remainder of 1983 to the increasing dismay of the stags — those investors who thrive by buying new issues and releasing them immediately and creaming off the premium. They have begun to stay away from tenders, as the Cable & Wireless offer indicated last year.

System Reliability has proved to be something of a "stag's banquet", but Phillips & Drew manfully insists that it did not underprice the issue.

Nonetheless the shares look set to open at a hefty premium.

## Shares yield £476,000

by Philip Hunter

INTEGRATED Business Communications, a UK pioneer of fast secure transmission of digital data, has raised £476,000 through an over-the-counter (OTC) placing of shares to speed development of new services.

The placing was arranged by United Trust & Credit, an issuing house and OTC dealer, with financial advice from consultancy Bolton House Securities.

The share issue through the increasingly popular Over-the-Counter market was fully subscribed. A total 600,000 units were sold, each unit comprising three 32p shares with an option to buy another one share for 37p within 30 days of any one of the three annual general meetings between 1986 and 1988.

The next step could be a placing on the Unlisted Securities Market, says chairman and managing director Don Atkinson.

The company supplies a transmission system based on the business microcomputer made by Convergent Technologies.

The system can transmit at data rates of up to 250 characters per second between offices in the UK, US, Switzerland and Australia, using public data networks. It offers companies a private network that can be used to transmit large quantities of text, such as legal documents or instruction manuals, between offices. It can also be linked to the telex network, which has a million worldwide subscribers, and the plan is to integrate it with digital facsimile and the proposed new teletex "de luxe telex" service later this year.

According to Atkinson, the IBC system starts becoming a worthwhile investment for organisations spending more than £500 a month on courier, mail and telex services.

## Aidcom takes Aim with down payment

AIDCOM International, the design, market research and technology group, has strengthened its hand with the acquisition of Aim Cambridge the microprocessor development consultancy based in St Ives, Cambridgeshire.

Aidcom has taken a 90% stake in the company from Tekell Holdings, parent of the TEK Group of Cambridge. The deal involves an initial cash payment of £240,000 with more to follow. A further payment is dependent on Aim pre-tax profits exceeding £83,000 in the year to October 31, 1984. If Aim should manage £125,000 or more, Aidcom will have to find a maximum of £150,000.

Aim's last audited accounts, for the 10 months ended October 31, 1983 show pre-tax profits of £50,000, annualised to £60,000, on a turnover of about £400,000. The company's managing director, Ian Quayle, retains his 10% shareholding.

Aidcom's move comes after the announcement in February of a 42% increase in pre-tax profits to £410,000, and the company's intention to seek a full Stock Exchange listing. The company was one of the first to join the Unlisted Securities Market three years ago, and this acquisition is the sixth since its flotation.

These have included DVW Microelectronics, the company which designed and markets the Husky ruggedised portable computer. DVW was renamed Husky Computer last year, and contributed about one-third of the group's profits in 1983.

Aidcom chairman Pratt Thompson says: "The acquisition is of strategic significance for the group."

Aim is seen as a good fit with Husky, and it will also have the opportunity to work with new products and industrial design services of Allied International Designers, another Aidcom company.

Aim employs about 20 people, with more than its share of Cambridge postgraduates.

## Masstor loss

MASSTOR Systems of Santa Clara, California has reported a net loss of $3.6 million in its fourth quarter to December 31 compared with a $600,000 profit in the corresponding quarter of 1982.

Sales rose marginally to $6.19 million. For the full year, Masstor posted an $8.7 million loss against a profit of $1.5 million a year earlier. Sales rose to $20.1 million.

The company says that sales of its standard products, chiefly the M860 mass storage system, doubled to $18 million.

## Dull doll

COLECO, the US cabbage patch doll manufacturer lost $35 million in its fourth quarter 1983, and cited "extremely high costs" incurred with bringing the Adam home computer to market as being responsible.

Its full year loss of $7.4 million compared with net earnings of $44.9 million in 1982. Sales rose some 17% to $596.2 million.

The company's 1984 operating plan calls for a return to profitability during the first half of the year.

## Cwbran costs eat up Cifer profits

CIFER, the terminal and microcomputer manufacturer based in the West country, which came to the Unlisted Securities Market last June, warns in its annual report that costs associated with the opening of a new plant at Cwmbran, South Wales, will "eliminate" the company's profits in the first half of the current year. But chairman Oliver Newman remains confident of a strong full year.

Cifer builds its new T range of terminals at the plant. In the year to September 30, 1983 Cifer reported pre-tax profits up 60% at £1.35 million.

## Income doubles

SYSTEM Industries, which makes and markets storage systems for minicomputers, has announced income up 113% at $621,000 on revenues up 46% at $28.2 million for the second quarter ended January 27. At the halfway mark net income stands at $1.38 million on revenues of $54.9 million. The company says shipments were affected by part shortages, and component prices were significantly higher than anticipated.

## Phicom up

PHICOM a quoted instrument and data comms group, lifted pre-tax profits 160% to £2.36 million in the year ended December 31, comfortably beating the forecast of £2.1 million made last November in connection with a rights issue. Sales rose 20% to £38.3 million. Its Data Communications and Life Sciences divisions showed particular progress. Data Communications profits stood at £3.1 million.

*Company News is compiled by Dave Madden.*

DE BENEDETTI . . . *"Best results to date."*

## Olivetti makes progress

OLIVETTI, putative leader of Europe's data processing industry, made strong progress in its business in Italy in 1983.

The parent company saw pre-tax profits rise 73% to 200.4 billion lire (£83.5 million) on turnover ahead 21% at 1,874 billion lire (£180 million). Net profits rose 49%.

Carlo de Benedetti, chairman, described the results as "the best achieved by the parent company to date". The improvement was attributed to higher domestic sales and reduced interest costs.

Olivetti's consolidated group results will not be revealed until May, but the company is expected to show "significant" increase in profits over last year's 102.8 billion lire with turnover ahead some 12% to 3,736 billion lire.

The performance in Italy, after stagnant years in 1981 and 1982, gives further impetus to a company already encouraged by the worldwide alliance with American Telephone and Telegraph, revealed at the turn of the year.

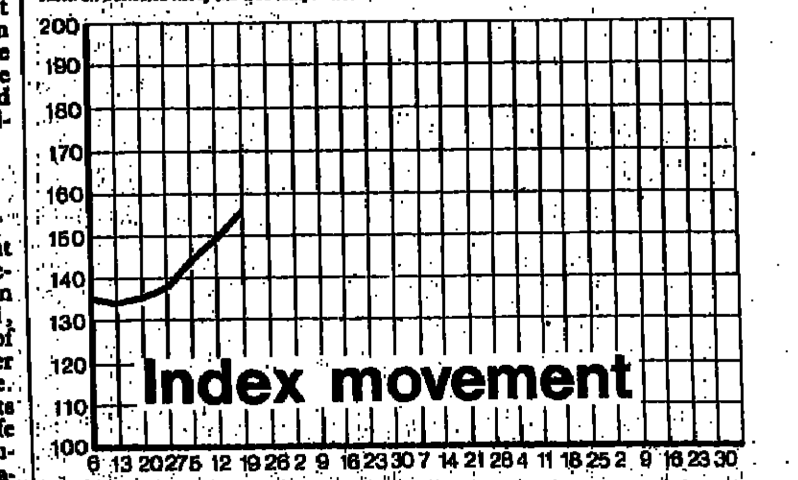
## SHARES TABLE

*The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.*

Previous published index 143.[illegible] 22/3/84 Index 150.31 Change +6.70

| Pence 1984 High | Pence 1984 Low | London Stock Exchange Stock | Pence Price | C'nge | $ 1984 High | $ 1984 Low | US Stock | $ Price | C'nge |
|---|---|---|---|---|---|---|---|---|---|
| 326 | 292 | Abingworth (10p) | 295 | + 3 | 20¼ | 18 | Amdahl | 18½ | + 1 |
| 679 | 489 | ACT (App Com) (25p) | 678 | – | 28¾ | 23½ | Apple Inc | 20½ | – ¼ |
| 475 | 415 | Atlantic Comp (10p) | 445 | –25 | 38¼ | 31½ | Auto Data Pro | 33½ | + 2 |
| 95 | 68 | B. Bay Kent (25p) | 85 | +11 | 52¼ | 44⅝ | Burroughs | 48⅛ | + 3½ |
| 172 | 147 | Chubb (20p) | 172 | + 6 | 9½ | 7 | Comp Auto | 8¼ | – |
| 190 | 118 | Cole Group (25p) | 190 | +16 | 21 | 13½ | Comp Sciences | 13½ | – |
| 685 | 415 | CASE (20p) | 685 | +70 | 13¼ | 8 | Comshare | [illegible] | – |
| 310 | 260 | DPCE (5p) | 310 | +12 | 46 | 36 | Control Data | 38¾ | + 2¾ |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |

*The table shows the closing prices in London on Friday and in America on Thursday and the changes from the previous table. Highs and Lows have been adjusted where necessary. The Shares Index is based on a selected list of the UK companies.*



**PROFILE**

# Computing is still fun for the kid who made it to the top

DAVID RODMAN was 10 when he started programming. Nowadays that is not uncommon, but in the early 1960s Rodman was something of a prodigy.

He wasn't just playing games, either. His early computer experience was at the Artificial Intelligence Laboratory at the Massachusetts Institute of Technology (MIT). Rodman's father worked at MIT and the son used to visit him after school.

He soon got bored with his father's office and wandered down the hall into the Artificial Intelligence Labs. Soon the staff were letting him key-in programs to the PDP-1 which their research centred on.

"They called me the Kid," Rodman says. "I became their mascot. Computers for me were something of an addiction."

He describes himself as a troubled child, with not a particularly happy home life. But in the MIT laboratory he was accepted. And he found that playing with computers was fun.

Rodman, who is now chairman and managing director of his own company, DJR Associates, still thinks computing is fun. When he thinks of his early introduction to computers and the delight it brought him, he says he finds it hilarious that you can now get a university degree in computer science – "a degree for watching television", he says. "I was doing it for fun."

He doesn't have a degree to his name. After seven years at MIT as a mascot and hanger-on, he went out to the wide world – and wandered around. He did a stint as a cab driver in New York City, sold cameras, tried his luck as a musician, and found some work in off-Broadway theatre.

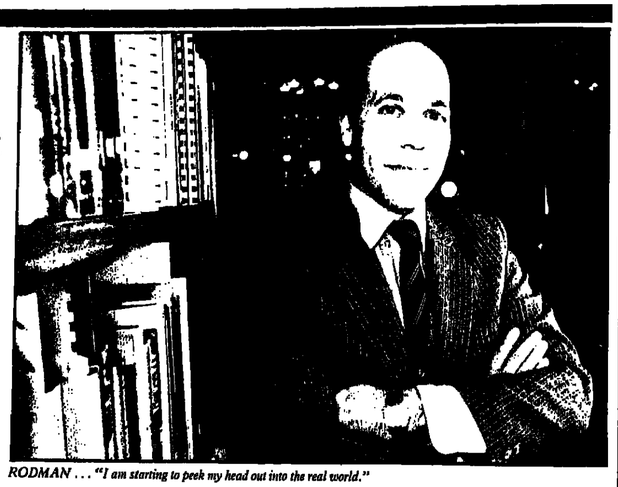
Finally he drifted back to Cambridge, Mass, where he got back into computing with a company that developed and disseminated training programs for drug abuse schemes. The first problem he attacked there was a mailing list system, working with an outside company to develop a computer-based solution which, he says, taught him that the customer does not know what he wants the way a programmer does.

**You can now get a degree for watching television. I was doing it for fun**

That in turn, he says, instilled in him the desire to find a common language that could be understood by business and programming people. Harking back to his days at the MIT Artificial Intelligence Laboratories, he saw a way towards a solution.

In the early 1970s Rodman started working for the Central Intelligence Agency through a consulting group, IRB Associates in Washington, DC.

He was director of data processing for the Human Factors/Bioynamics Laboratory in Rosslyn, Virginia. The work there was funded by the Department of Defence Advanced Research Projects Agency (ARPA), which at the time was behind nearly all artificial intelligence work in the US.



*RODMAN ... "I am starting to peek my head out into the real world."*

But Rodman found the strain of not talking to people about his work too much too handle. In 1974 he started his own company, DJR Associates, which was set up to provide software and consultation to clients in the Washington area. He eventually got a DEC minicomputer in his one-bedroom apartment, and he rented time to clients.

Looking at his clients' problems, he found the same thing was being done over and over again – adding, changing, deleting, and printing of records. Why not, he asked himself, write a program to do that, but which separates the format of information from the program?

So was born FMS 80, which Rodman says took the leap of separating process from data.

The initial product had no report generator, or language, but people were crazy about it, Rodman says.

FMS 80 developed into 50 or so programs which were parameter driven. Users no longer had to write programs, but could tell programs how a job was to be done. The result, says Rodman, is to bring computing power into the hands of reasonably intelligent people who don't want to know how computers work. "For me," he says, "it was almost a crusade".

FMS 80 sold well in the US, and for a while was one of the top selling database systems for microcomputers. But it is off the charts at the moment, pushed into the also-rans by systems like Ashton Tate's dBase II.

Technically, Rodman believes FMS 80 is one of the best systems. But he realises now that technical excellence doesn't necessarily win the day. "If I had gone to college, I might have known this," he jokes.

He admits to knowing little about marketing, and says only recently has he become a good salesman.

"I am starting to peek my head into the real world. I have been reluctant to succeed." Now, he says, the product is leading him. In the UK he has one convert, David Warren, of Panoramic Computing, a small start-up software company in Wiltshire. Panoramic distributes FMS 80s here.

Rodman says Warren has been instrumental in ensuring that Rodman has pushed FMS 80 forward. Last week Philips Data Systems of the UK signed a deal with Panoramic to take FMS 80 on as licensed product for its 3500 micro.

Rodman is now in the process of securing funding for his company in the US, ready for a big marketing push.

His hope is to sell software which "appeals to people's commonsense", and which will give microcomputers a better name. His ultimate dream, he says is "one computer and one program".

He says he's on his way towards a "totally intelligent system". If he achieves that aim, they might call him the Kid again.

**PLATFORM**

# Sun sets on the cowboy firms

THE days of the "cowboy" computer contracting firm – specialising in dubious jobs and intermittent payment – are all but over. While hundreds of such agencies, some indistinguishable from the average used-car dealership, flourished around London in the 1970s, the present trend is for longer-term, more stable relationships all round.

The sort of operator who sent out woefully unsuitable staff, offered little in the way of back-up or advice, and – in at least one case – felt compelled to leave the country, is dormant if not extinct. Most of the rough diamonds have moved on. In short, the computer contracting business has grown up.

A symptom of this has been the dramatic improvement in the contractor's or freelancer's status. It could hardly have been worse. That was a common complaint when the tidal wave of freelance workers first hit the market 20 years ago. To many contractors it seemed that the agencies' attitude was at best indifferent, at worst blatantly mercenary.

Quite simply, most contractors had no idea about business – and certainly weren't getting one from the agencies. All that has changed. Today, perhaps 90% of computer freelancers have formed their own limited companies. The reputable agency should aim to give advice on topics like income tax and Vat, not just dump the contractor in at the deep end.

The other side of the problem lies in the way contractors fit into their temporary companies' hierarchies. Unsurprisingly, some permanent staff have been known to object to the use of highly-paid outsiders. Wages of £500-700 a week are not uncommon, although only for the time the contractor is actually in work; unlike his full-time counterpart, he doesn't qualify for holiday – or sick-pay.

Data processing firms generally are notoriously slow to fill vacancies. Even in an era of mass unemployment most companies have openings, but have no desire to go through the mind-boggling routine of interviewing and selection. This is where the qualified contractor can come in.

Again, as the professionalism of temporary staff has increased, so internal opposition has diminished. It's up to the agencies to ensure that contractors are suitable in the first place.

All this is unlikely to happen if agencies (and some have) take prospective clients for granted. This is nowhere near as rife as it used to be, but employers should beware. There are agencies and agencies. Circumstances have changed dramatically since the first rush of contractors in the 1960s. Agency fees proportionally have come down while, just as importantly, a real attempt has been made to send out only qualified staff. After all, the contractor is essentially the agency's ambassador to the client. If he doesn't do his job, neither have we.

The client base for contract agencies has never been greater. The supply of contract personnel – experts on whatever DP problems need to be solved – can literally save a company a fortune in hiring and training permanent staff of its own.

Obviously the key to success for any contract agency is repeat business. As a basis of mutual trust builds up, so employers and staff come to rely on agencies for more than mere brokerage. The importance of continuity here is paramount. Knowing when individual staff will be looking for work obviously gives the agency flexibility in planning ahead.

A contractor returning three or four times – and many do – means the firm must be doing something right. It also helps if the agency is frank about its financial provisions with both sides, the idea being to make a profit without seeming exorbitant.

The computer contractor is a specialist; more so now than ever. Programmers and analysts are moving in increasingly esoteric waters, ensuring that the successful agency has to be technically au fait with its market.

Today, while technological progress continues, there are at least discernible signposts to the future. A good contract agency will employ people who have technical backgrounds established over a long period, will always come clean with a prospective employer; and, most important of all, will offer continuous back-up and support to contractors.

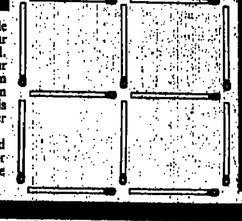
*Doug Woodward*

*Doug Woodward is managing director of the Sigma Group, whose subsidiary, Sigma Contracts, has contracts involving over 100 personnel.*

**PUZZLER**

THESE 12 matches from a single composite diagram in which four squares of equal size are outlined. The problem is to move four matches to new positions, to form a new single composite diagram in which only three squares of this size are outlined (and no other shapes).

All matched must be fairly used – no overlapping or other "suppressing" techniques are allowed. See page 79 for solution.



*Liveware File by Don*

**DOWNTIME**

## Disinformed in Hounslow

A CASUAL visitor to Wang's Hounslow, West London, office, en route to Data General's building in the same neighbourhood, had the bright but unfortunate idea of asking the Wang security man the way.

"Ah, yes," said the security man at the desk. "Data General, eh! What you want is London Road, Isleworth, dearie." And he very kindly routed the caller through the rush hour traffic, three miles the other side of Hounslow.

After a fruitless trip, she discovered Data General about an hour later, lurking just across the road from the aforementioned competitor.

No doubt the Wang man was referring to the Isleworth engineering and maintenance department and meant well. Or perhaps he was just extremely loyal. A real Wanger.

## The vices of marketing

JUST who does John Clemens think he is? We thought he was NAS marketing manager in the UK. But no. Somebody else claimed him to be vice president, European operations, so we thought we'd better ask NAS.

"Marketing manager Northern Europe" was one reply. "Vice president Northern Europe," another. "Regional vice president," yet another. So we phoned his PA.

"He's actually all of them," she replied, "except marketing manager UK, that was his old job."

## Atlas sales are safe

RUMOURS were flying like IBM lawsuits last week following the acquisition of 49.6% of Amdahl by Fujitsu.

The word from the plug compatible lot was that ICL would be dropped as UK distributor by the Japanese manufacturer.

Amdahl and Fujitsu both denied that any such move would take place, but one wag suggested that even if Fujitsu were to pull the plug on ICL as a plug compatible supplier, it would hardly affect the sales figures of its Atlas.

## Amdahl goes to the beach

AMDAHL may have been a bit surprised when Fujitsu bought almost half of it but it can't say it wasn't warned. Only a few months ago a little gathering of plug compatibles was addressed by semiconductor man General Gavin, who did his good news-bad news skit for the troops. For the good he said: "Yes, the Japanese are going to invade and take on IBM. The bad news is that as every general knows, to invade you must have a beachhead. And gentlemen – we are the beachhead."

*Chad*

## 10 YEARS AGO

**FROM COMPUTER WEEKLY OF MARCH 21, 1974: Perkin-Elmer made a bid for US minicomputer maker Interdata ... Vickers Engineering gave a £1 million order to ICL.**

**ComputerWeekly**

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, March 22, 1984

# Are we all being conned?

ARE we all being conned with dreams of a fifth generation computer that walks and talks and listens to our conversation? Yes, says Gordon Bell, who calls the Japanese fifth generation a massive public relations programme.

Bell, once head of engineering at Digital Equipment Corp and a highly acclaimed computer architect, last week gave the second annual British Computer Society Jubilee lecture, which is sponsored by *Computer Weekly*. In a far-reaching presentation, he challenged much of the conventional wisdom about where computer technology is going. And in so doing he put some of the wilder claims about the fifth generation into some perspective.

Even while calling the Japanese effort "one of the most fabulous games around", Bell did not belittle the potential effect of what they have started. It is also a creative vision, he said, which has caught our imagination.

Bell also has no doubts that the Japanese will reap enormous benefits. They will learn how to do research, they will learn a great deal about knowledge engineering and other artificial intelligence techniques, and many important by-products will come from the far-out goals they have set themselves.

Leaders of the Alvey Programme, the UK's own fifth generation project, might feel a moment of anxiety after hearing Bell's words. Have they been led down the garden path?

No – at least as long as they don't believe in the magic of revolution.

The next generation, Bell predicts, will be more of what we have. And the way forward, he believes, simply requires a lot of plain work. That is not to say that future developments will be boring. There will, Bell believes, be at least another 20 years of fine exponential growth ahead. But we must be cautious about what we throw our money at. And we must not forget that while ours is essentially a service-based industry, those services are based on excellence in engineering and manufacturing.

## Tebbit makes amends

NORMAN Tebbit's announcement of financial support for information technology during the last day of the budget debate makes amends for Nigel Lawson ignoring the industry during the Budget proper.

And the announcement itself represents something of an about-turn. The previous Chancellor cut the Micoelectronics Industry Support Programme from £70 million to £55 million. Now not only has it been extended to the end of the decade, but the government has found another £120 million for it.

The government says that it has been tempted into this initiative because it considers that MISP, as well as the £85 million Microelectronics Application Project, have proved sound investments. It believes that microelectronics are used far more readily in UK industry than would otherwise have been the case.

Moreover, MISP gives the government some support for its conviction that government money should be treated as a stimulus and not as a substitute for private investment.

Its view is that MISP has encouraged the semiconductor industry to help itself, and has inspired investment on a ratio of 1:3.

So MISP has proved a politically sound programme, and has been suitably rewarded. But on a wider front the government may have realised that semiconductor manufacture is a critical and strategic element of Britain's information technology efforts.

It may be no coincidence that the government has persuaded itself to find money for microelectronics at a time when it is increasingly concerned about the conspicuous dependance of the UK computer industry on foreign technology.

This has been heightened by the continuing controversy over US export controls. Perhaps a more satisfactory long term solution for the UK will have less to do with winning arguments over the application of US law here, and more with encouraging the self-sufficiency of our suppliers.

## 1984 and all that ...

**THIS week's example of the strange things people say about computers was sent in by Chris Baker, of Coulsdon, Surrey, who wins £5.**

**"But the computer wins in the end. Your name has been programmed into it, and nothing, but nothing, will erase it."**

*County Border News*, Tandridge.



**LETTERS**

## We need new economics to match new technology

YOU reacted very strongly to the Apex survey, yet it seems a better basis than Delphic questionnaires that lead to major forecasts.

That new technology will lead to net job losses is no surprise. Automation usually has that effect once the equipment is fitted and working. What is different about office automation is that it concerns service industries, not just manufacturing industries.

That different results are wished for does not mean that a new survey will give them.

It is an unfortunate practice that so many figures are given in relative, not absolute, terms: 50 jobs lost to one created, "growth" as the difference of the GDP of two years, percentage pay increases. All this conceals the actual size of problems, and accuracy tends to be very low (and not stated) as small differences between large numbers tend to accentuate fluctuations rather than show trends.

The two, or more, tier society is well known, and getting worse; with many wages and benefits reduced in the name of competitiveness, while salaries are raised. The repeated call for more productivity implies fewer staff.

What is more important is to consider the work that needs to be done to make society pleasant for all, not just a few. For a few decades there is more than enough work needed, compared with the number of people available to do it; but most of this work is not for making new products (creating wealth).

House repair and improvement, caring and education are all labour intensive, and being neglected.

It seems that this work is being ignored because present economics cannot provide for it to be done as jobs (work for pay). So new economics are wanted to go with the new technology that has taken us into the post industrial era (few jobs in industry).

Apex's report was a report. What is needed is a policy to suit the facts, and this is a responsibility of society as a whole, not just one union, as unions are organised by trade, not in terms of whole local communities.

HENRY COX

Alsager
Stoke-on-Trent.

## Meaningful statistics

AT the risk of continuing an electronic mail argument already running in the US through *BMMS* magazine, can Antony Kench of Geisco (Letters, *Computer Weekly*, March 8) please clarify whether the GE Quik.Comm system had 20,000 users as per his letter, or 40,000 subscribers as per *BMMS*, January 16?

In reality, are these 20,000 or 40,000 actual users of Quik.Comm or just subscribers to the Geisco timesharing service to whom the Quik.Comm facility is available?

Can we expect to see Kench responding to the challenge of Rob Elmore of Tymshare and publishing the really critical figure of the number of actual paid messages delivered by Quik.Comm over a one month period (*BMMS* February 1)?

MIKE LACEY
Principal consultant

Eosys
Slough.

## Confusing abbreviations

YOUR article, Ma Bell's Orphans Come to Market (Company News, *Computer Weekly*, February 23), has been brought to my attention. As there is room for significant confusion between my own company, PA Computers and Telecommunications, Pactel, and Pacific Telesis, which has a confusingly similar abbreviation for its name, it would be helpful if you could adopt the practice of referring to them in full as Pacific Telesis, rather than using the abbreviation.

As a last resort, if you feel that the abbreviation cannot be avoided, you will note that they spell it PacTel. This is a small difference but, we hope, enough to minimise the potential confusion outside North America.

I would appreciate it if you could take steps to make the distinctions clear, so that potential problems and embarrassments between Pacific Telesis, our clients and ourselves can be avoided.

JOHN E. JARVIS
International chief executive
Pactel
London SW1.

## Personal integrity?

AS a loser I object to the tone of Alan Williams' article How to Identify the Losers in Your Team (*Computer Weekly*, March 8). He says, among other dubious things, "In my experience one's gut feel is always right. If you suspect one of your subordinates is cheating, it's almost certain he is. Invariably, you discover that areas of suspicion are but the tip of an iceberg of dishonesty in one manifestation or another . . . ."

Well maybe *his* judgment is that reliable, but in my experience that of most people (managers included) is not, and such suspicions more often than not arise out of things such as the attitudes of the colleagues of the individual under suspicion towards him.

Not a few able and hard-working individuals are afflicted with the tendency to attract such negative attitudes and to judge them on this basis, as sadly is often done, is surely wrong.

To me it looks very much as if the author is using his *Computer Weekly* column to "have a go" at an ex-colleague.

EVERARD CUNION
Christchurch
Dorset.

## Typing postcodes

WITH reference to the letter from Ivor J. Smith (*Computer Weekly*, March 1, 1984), I do not think that the last word has been said yet on the postal codes.

Apart from their use when computing, nobody has said a word about the difficulty in typing. The code for *The Times*, which is, WC1X 8EZ, involves the typist in making the motions, of her shift key, up, up, down, space, down, up, up! It would be difficult to work out a system involving much more changability.

If the code were like XXXX349, it could be interpreted as XX XX 3 49, and the typist's movements would be only, up, up, up, up, down, down, ie only *one* motion on the shift key.

As for the argument that the Post Office wanted to preserve the existing divisions of the major cities, they have not done so, for in the code for the *The Times*, where is the identification of London itself?

Moreover, the very same Post Office (as it then was), thought nothing of its own convenience or of ours when it abolished the London Telephone Exchange names and substituted numbers, making Pinner, for example, equal to 866.

We were expected to put up with the additional hardship of remembering numbers instead of district names. I would not claim that it is easy, but at least, we have learned to live with it. With a postal code of sufficient letters, we could have at least two of the early letters to help jog our memories on the general area.

Judging by the lack of speed of the current deliveries, it is not too late for British Telecom, a stupid name, to start all over again.

ARTHUR D. DENTON
Littlehampton.

## The answers keep growing

THE Puzzler (February 9) asks how to mark the faces of two dice so that the probability of any score between 1 and 12 is the same on one throw of both dice. The proposed solution is:

(1, 2, 3, 4, 5, 6)
(0, 0, 0, 6, 6, 6)

Whilst Andrew Young (Letters, *Computer Weekly*, February 23) gives another seven solutions, the proposed solution involves only changing five numbers on the second dice. Other solutions are possible.

- Mark each face of the second dice with a dot. The score equals the number on unmarked dice plus 6 if number on marked dice is even.
- Mark the second dice with the numbers (7, 8, 9, 10, 11, 12). The score equals the lower of the two numbers, if one dice shows odd and the other shows even, or the upper of the two numbers, otherwise.
- Blank out the numbers 5 and 6 on one dice, and replace 4, 5, 6 with 1, 2, 3 on the other. Keep rolling the first dice until it gives a number from 1 to 4. The score equals the number on first times the number on second.
- Number the edges of the dice by placing a number from 1 to 12 on each side of an edge. The score equals the number of the edge facing the thrower.

TERRY ANDERSON
London N8.

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**Practical Computing**

# PLUG COMPATIBLES

# When Amdahl threw down the gauntlet to the Blue Giant

## Chris Naylor plots the ups and downs since Gene Amdahl had his IBM plug compatible brainstorm back in the 70s

IN 1970 Gene Amdahl, then of IBM, had a very good idea and it went, roughly, like this.

IBM makes lots of money making computers, charges a more than goodly sum for them, and has precious little competition. This is because a customer, once he's bought IBM, gets locked into IBM with no easy alternatives.

Why not provide him with an alternative. An alternative that doesn't involve the customer in having to abandon IBM altogether – just an alternative source of supply for one, pretty essential, piece of kit: the processor.

In short, why not make an IBM plug compatible processor that could be sold straight into IBM's established customer base at a price and performance that would bring tears to the giant's eyes?

Sounds like a good story? Well, however it sounds, Gene Amdahl must have been pretty good at telling it because he persuaded three sources of finance – Heizer Corporation, Fujitsu and Nixdorf – to put up no less than $50 million on the strength of this tale, simply in order to design and build one processor.

That processor was the Amdahl 470 V/6 and it was wasn't finished and on to the market until 1975, during which time, one can reasonably surmise, the floorboards of executive offices must have become damp with sweat from the foreheads of those who had put up the money.

In fact, so moist did the foreheads become that one, Nixdorf, pulled out altogether, leaving just Heizer and Fujitsu to foot the mounting bills.

What Nixdorf now thinks about its decision to pull out is anybody's guess – but the two survivors are still shareholders in a corporation with a worldwide turnover approaching the £1 billion mark. And, by the by, Nixdorf itself is said to have recently bought a couple of Amdhal 580 Series machines, maybe just to show there's no ill-will, maybe in acknowledgement of the machine's sterling qualities.

Or, maybe, to work out how much it could have made by staying in.

But a glance at Amdahl's financial figures since 1975, when that first machine hit the market, reveals that backing Amdahl hasn't been the same kind of game as, say, backing IBM when it first took an interest in the thermionic valve.

Certainly, the 470 V/6 hit the market pretty hard as a replacement processor for the IBM 370/168, notching up revenues to over $100 million within about one year.

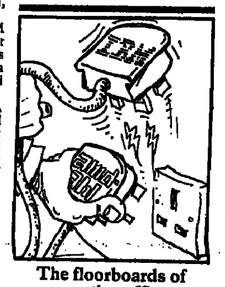
And the follow-up marketing strategy to the V/6 was pretty smooth too. But there have been downs as well as ups in Amdahl's history.

The easiest way is to look at developments in three stages. In the first, the 470 Series is going well; in the second there is something which might reasonably be described as problems; and, in the third, comes the period Amdahl is entering now.

Starting with the first phase, up to 1979, growth and profits were of the sort which would keep anybody happy. This was largely because of the smooth marketing strategies used to push the 470 Series and because of the technical qualities of the machine itself.

The marketing strategies consisted, basically, not just of having one model of the 470, but of continually beefing it both up and down to keep the technological edge and draw new users into the net.

The beefing-up process came in the form of the 470 V/7 (1977) and the 470 V/8 (1978) and the beefing down came in the form of the 470 V/5 which was a de-tuned version of the V/6. Later, in 1979, came




**The floorboards of executive offices became damp with sweat from the Heizer and Fujitsu foreheads**

the Accelerator – a device which enabled V/7 users to temporarily increase the performance of V/7 machines up to the level of the V/8.

Now, amidst talk of beefing up and down either permanently or temporarily, there springs to mind the obvious question: How?

That is, how do you beef up a machine? And how do you beef it down? And, how does the Accelerator do it only temporarily?

After all, if it takes five years to develop the original V/6 you surely can't just sling out a new model in a matter of months?

The answer is apparently fairly standard mainframe practice. What you do is to build just one machine – a powerful one. Then you slug it so that it runs slow and put that slugged version on the market. Remove the slug a few months later and you instantly have an upgraded, higher-powered machine all ready for customers to move on to.

And, as slugging a machine is pretty easy in design terms, you can simple install a switch on the machine so that it can be slugged or not at the user's convenience. And that switch is the Accelerator option which Amdahl introduced for V/7 users – a slug on the V/8 which can be removed at will.

At which point, most people wonder why users ever leave the slug in at all – the answer to which is; money.

The switch is connected to a device which, in principle, resembles the domestic gas meter. Switch on the Accelerator (ie remove the slug) and the meter starts charging you for it. That way, Amdahl makes more money and the user gets more power.

The user, of course, doesn't leave the Accelerator on all the time, simply because the meter charges at such a rate that to have the slug removed all the time costs more than to buy the next step up – the V/8 which *is*, of course, an un-slugged V/7.

So, really, when you buy your processor, to all intents and purposes, you are buying the same box, whichever model you pay for.

The only factors that vary are the price and the extent to which the machine has been slugged. The more you pay, the less it's slugged and vice versa.

Purists might feel that there's something not quite right about this approach. After all, if the boxes are essentially the same isn't it a little bit *odd* to charge a customer more, substantially more, just to allow him to run the machine at full belt?

After all, the sales of the slugged version must be making a profit – so what sort of profit exists on the sales of the un-slugged top-end models? Enormous, one would surmise.

There is, however, rather more to it than this. What it amounts to is that the user does his equations in terms of money and mips – that is, how many millions of instructions per second he can get for a given price. Double the mips and, for the user, you can double the price, roughly speaking. So, typically, users are happy with this arrangement.

Now turn to the manufacturer's point of view. Both boxes, slugged and unslugged, cost it about the same to make – but only so long as the volume of production remains constant. If it could sell more of the machines it could make them for less, as mass production came into play.

So, how can he sell more? Answer: by offering a cheaper machine.

And, from the users' point of view, cheaper simply means less mips. So, by slugging the machine, a larger market is created which enables overall costs to be brought down, which is of likely benefit to the user in the long run. There is also a guaranteed upgrade path in the machine series by the successive de-slugging of the machine.

That is how the marketing works. And, in case anyone has any odd ideas, it isn't only Amdahl which has practised this to good effect. It is a fairly standard ploy of mainframe manufacturers – to let users do their sums on a money and mips basis whilst they do their sums on a money and production volumes basis.

The benefit to Amdahl up to 1979 was obvious – it pretty well cleaned up. The benefit to the user was also substantial – by introducing competition into the IBM processor market, the cost of mips fell for whoever they were bought from.

But nothing in this world lasts for ever. Or, at least, machine ranges don't. And the first signs of trouble began to appear in 1979, after the 470 had been on the market for four years.

It wasn't disastrous trouble (Amdahl is still there) but it was a combination of unnerving occurrences. For a start, IBM started rocking the boat with the announcement of the 4300 Series,

*Amdahl aimed to sell the plug compatible processor at a price that would bring tears to the giant's eyes.*

which made everyone wonder what was going to happen next.

At about the same time, the computer industry itself started to slide into one of its periodic spells of recession – and the effects at Amdahl of recession and uncertainty showed themselves in the form of a first-time drop in profits in absolute terms coupled with a drop in turnover. This is the second phase of Amdahl's existence.

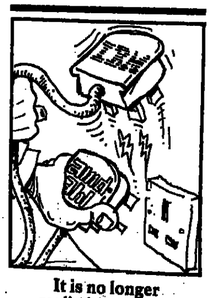
In 1979, Amdahl negotiated $260 million of credit to keep the wolf from the door while it worked on new plans. In 1980, it acquired Tran Telecommunications Corp to get itself a foothold in the communications business. In the same year, it raised more money with a $55 million stock offer, announced the 4705 front-end communications processor and, later, it announced a new machine series – the 580.

But IBM wasn't asleep during this time. The 308X was announced; prices of the 303X were cut; and word spread concerning a new IBM operating system – MVS/XA.

The official Amdahl line is that these things were sent to try the company, not to destroy it. But in 1981, Amdahl raised a $370 million line of credit which argues two things: one, that it was still seen to be very viable; and two, that it anticipated a pretty nasty grind in order to stay there.

Both arguments seem to have been sound. Amdahl appears to be currently very viable, having added Fujitsu-manufactured 6000 Series disc drives to its range and, finally, launched the 580 Series. A glance at its 1983 figures tends to confirm this view.

But it must have been a grind,




**It is no longer realistic to regard Amdahl purely as a plug compatible processor manufacturer**

good for a firm which, some feel, has to be able to deliver faster than IBM.

But with the 580 Series now well and truly available, we get to the third stage of Amdahl, the current phase, and the question arises: what, actually, is Amdahl?

The answer has to be that it is no longer realistic to regard Amdahl purely as a plug compatible processor manufacturer. It can offer comms and it can offer drives. Buy your printers where you will, but you could not go totally Amdahl and forget IBM altogether. Not that anyone will ever really forget IBM – practically every industry standard there is comes from that stable.

But it may be less than fair to regard Amdahl as an IBM plug compatible manufacturer simply because its kit adheres to IBM standards and runs IBM software. Perhaps it would be more realistic to say that some computer manufacturers don't adhere to the *de facto* standards set by IBM and that it is these, and not the IBM plug compatible manufacturers which should be viewed as the industry's potential poor cousins.

As for Amdahl's marketing, some things in life may change, but this shows little sign of it. At least, not in its processor strategies.

The basic machine is the 5860 which, as you've probably guessed, can be slugged down into a 5850 or 5840, either of which can have an Accelerator fitted to deslug them for short periods. Upgrade from the 5860 and you get the attached processor 5870 and, from that, the dual processor 5880.

For the user, this is simply a smooth progression upwards for compatible machines which also happen to be IBM-compatible.

For Heizer and Fujitsu, which still remain shareholders in the action, it must look like a new Amdahl Corp – a return to the period 1976 to 1978 with the added attraction of diversification.

You can almost see the dollar signs twinkling in their eyes.

*Chris Naylor is a freelance journalist.*

The first 580 was installed one and a half years after it was due, because it is said, of problems experienced with the input/output processor – although rumour has it that a contributing factor was the need to accommodate MVS/XA.

This kind of delay cannot be



# ICL: battered but still undismayed

## Despite the failure of Atlas, ICL is hanging on in there says John Kavanagh

OLAF VON BULOW is cheerfully frank about the fact that ICL has won only three customers for four of its Atlas 10 IBM-compatible mainframe in two-and-a-half years.

"It hasn't taken off," says the director of the Atlas division. "The systems have proved tougher to sell than we expected. We hadn't expected IBM price-cuts or that the company would be so flexible on pricing or that there would be such a huge drive on XA."

XA is the extended version of IBM's flagship operating system, MVS; so far ICL has concentrated on MVS, but it will start delivering XA in July.

Meanwhile competitors in the IBM-compatible market laugh off ICL's attempts to break into the business. And even senior ICL users say they are not taking the company seriously.

Von Bulow shrugs all this off and points to ICL's wider "IBM surround" strategy. This dates back to the earliest days of Robb Wilmot's reign as managing director. He joined in May 1981; a month later, the System 25 distributed computer was launched as the first major product line to offer links into IBM's systems network architecture (SNA).

A month after that came the DRS 20 distributed processing range with its IBM links.

As von Bulow says, "Robb Wilmot has forced ICL to look outside its own customer base after stagnating in the late 1970s."

In between these 1981 product launches came an agreement with the big Japanese manufacturer, Fujitsu. The company would supply ICL with the technology for its next round of medium and large mainframes – and Fujitsu's top-end IBM-compatible mainframes would be sold by ICL.

The machines are Fujitsu's Facom M380 and M382 single- and dual-processor systems. They are claimed to be faster and more reliable than rival machines; the logic chips have a packing density of 1,400 gates per chip, and Fujitsu has recently moved to 256K memory chips. The average meantime between failures on all Fujitsu M380 installations is 7,000 hours.

ICL sells complete Fujitsu systems, including peripherals. Von Bulow points out that this guarantees complete compatibility, and rules out disputes between separate suppliers over system faults.

ICL has dropped the Fujitsu operating systems and offers only IBM systems.

Atlas prices are up to 50% less than IBM's for comparable machines. "Users expect at least a 25% price cut if they are to move from IBM, mainly because of IBM software support," von Bulow says.

The Atlas division has around 65 people. Most of the staff have IBM experience, having worked for IBM, a compatible processor supplier or a user, or having come from ICL's old System 4 mainframe operation. The System 4 was similar to IBM's equally ancient 360 family.

There are 15 people on software support and 10 on hardware support. Another seven people spend nine months with Fujitsu to get to know the machines inside out. In addition, external consultants are called in to advise if necessary.

With his mixture of staff and ICL's background, von Bulow feels ICL can convince users it has the support resources and networking experience. This view is supported by the first Atlas user, the Science and Engineering Research Council (SERC), which replaced two IBM 360/195s.

"It hasn't taken off," says the director of the Atlas division. "The systems have proved tougher to sell than we expected. We hadn't expected IBM price-cuts or that the company would be so flexible on pricing or that there would be such a huge drive on XA."

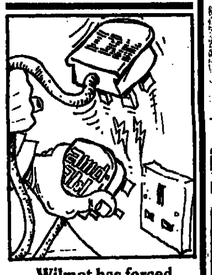
"ICL has proved a very good supplier," says Dr Bob Hopgood, head of computing. "Looking back, we were more apprehensive than we needed to be. And I think ICL has done a lot better than the company itself expected. We have maintained support but we've not needed a lot of ICL people running around."

Traditional ICL users have yet to be convinced. A senior member of the ICL users association says: "We haven't discussed Atlas formally, but privately we wonder what ICL is doing in this market at all.

"The market is full already with established firms like Amdahl."

Some users suggest that Fujitsu forced ICL to take the Atlas range as part of the technology deal. Von Bulow denies this.

On the other user views he says:




**Wilmot has forced ICL to look outside its customer base**

"Our 2900 customers understandably have a foggy picture of what we are doing. Siemens in Germany took the Fujitsu kit and stopped building its own. We're not like that; we're not swapping our 2900 customer base for an MVS base."

ICL's competitors are scornful of the company's Atlas business. This is only to be expected – but talking independently of each other they take a similar line. Bryan Little, managing director of Amdahl in the UK, says ICL "lacks conviction" in the commercial market, although it is stronger when going for government contracts.

National Advanced Systems, with 50 staff and 40 UK customer sites, is less restrained in its comments. "We don't even see ICL as competition," says marketing manager, John Clements. "If our performance or Amdahl's had been like ICL's, we would have been closed down long ago."

Von Bulow does not try and bluster his way out of this corner. After the SERC order, ICL won a contract from a long-standing 2900 customer, J. Sainsbury, and last month its third order came from the RAF, which is replacing System 4s with two Atlas machines and 46 disc drives.

ICL is also bidding for four other contracts and is close to winning one of them – in the commercial sector.

"When Robb Wilmot negotiated the Fujitsu agreement, IBM had only launched the 3081D."

Hopgood at SERC says that ICL was "keen to sell Atlas and made us an attractive offer". Von Bulow agrees – but says ICL did not make a loss on the deal.

His hope is that the market will eventually turn on IBM. "IBM just can't carry on like this, making people live in fear and running the market just as they please," he says. "In Greek tragedy it's called hubris – and one day it will hit IBM. We will have to hang on in there."

IBM has dominated the industry since the late 1950s. ICL has been hanging on in there since 1981. But von Bulow still stays cheerful.

*John Kavanagh is a freelance journalist.*

*Von BULOW . . . "Atlas systems have proved tough to sell."*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CLEMENTS . . . "IBM forced to take plug compatible market seriously."

Fierce rivalry rages in the compatible community . . . Keith Holder reports

# Vendors keep IBM right up on its toes

THE plug compatible mainframe, a machine which can be substituted for an IBM computer without loss of function or change of programme or operating system, has kept IBM on its toes since 1975.

Of the manufacturers who make their living from IBM's customers by persuading them to adopt these compatible processors, the Japanese company Hitachi has become one of the most successful with a 48% slice of the plug compatible cake.

Its machines do not merely match, but surpass the performance of IBM's range by a comfortable margin, and have maintained a 20% price performance advantage over "Big Blue" since their launch. They not only replace IBM machines but offer advantages to the user like air-cooling, improved reliability, maintenance and support.

Hitachi is unusual, however, in that its machines are available from three vendors: National Advanced Systems (NAS), Olivetti and BASF. This trio sells into the same market competing with each other.

Just why the Japanese company decided to set up deals where its distributors would find themselves in competition was never explained at the time. The most popular, privately expressed, opinion from the companies themselves is that Hitachi, in the light of its embarrassing experience with its distributor Itel, which crashed in 1979, had decided never again to put all of its eggs into one basket.

Instead, it wanted to present a solid local image, from established name companies in Europe, copying IBM's image strategy.

Once the three distributors began to deliver their first machines, the first of a series of highly unsuccessful negotiations began between them. These were aimed at carving up the market into sections which would become exclusively exploited by only one company.

Eventually, despite some published reports about what would become of Olivetti's computer division and whether NAS would ever speak to the Japanese again, the stage was set and the three continued to trade – with varying degrees of success.

The situation today is that the market has declared NAS the clear winner in the contest of European marketing ability, with almost 30% of the total market. BASF has just over 10% and Olivetti about 7%.

Of the three, Olivetti has suffered most in recent times, while BASF's order book suggests its position will improve.

Olivetti's poor performance is said, by Jeff Evans, manager of its new plug compatible division, to be attributable to a lack of understanding by the main parent company. He says salesmen were required to sell a variety of products alongside the plug-compatible computers, and were never able to match the efforts of its rivals.

This was despite a first year which showed the company doing well, selling 18 Hitachi machines and 37 IPL processors: well over the company's forecasts. Many of these sales were, understandably, in Italy.

After this, things got steadily worse, to the point where there was serious speculation that the company would drop Hitachi's range altogether, though continuing to support its existing user base.

At the time, Olivetti, in theory, offered the complete Hitachi range, though Evans says that in practice, the company only concentrated on the higher powered machines.

Times have changed, says Evans, as has the company's approach to selling plug-compatibles. The plug compatible division, formed this year, is getting into its stride and plans to capture 10% of the market over the next two years.

Although the recent 20% share acquired in the company by AT&T does not directly affect this sector of Olivetti's Evans does not rule out the possibility of marketing new products from AT&T in the future.

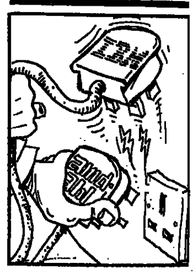
Both NAS and BASF have expressed unflattering opinions of Olivetti's ability to stage a comeback, but Evans is adamant that the division has a bright future. It has added some new machines to its range in the last month, two from Hitachi and one from IPL.

Whether Evans' more aggressive stance pays off with orders only time will tell. He says the announcement of some major orders is imminent.

BASF's computer systems marketing manager, Rolf Brillinger, is even more ambitious, and aims to see his company number two only to IBM in Europe. The company relies totally on Hitachi for its computers which range from low-end medium systems, equivalent to the 4031, to large-scale machines able to compete in the top of the 308X market. It has traditionally sold large numbers of machines for leasing, but is now more concerned with selling direct, he says.

Brillinger is a realist, however, and realises that the road to a larger slice of the market needs a softly, softly approach, where it is important to get a foot, or more precisely a processor, in the door and work up from there, rather than going for all-out strategies.

Top of the Hitachi tree is NAS.



**The road to a larger slice of the market needs a softly, softly approach, where it is important to get a foot, or more precisely, a processor, in the door**

Rising out of the ashes of Itel's failure, the company has steadily clawed its way up the market share ratings to the point where only Amdahl sells more machines.

Like BASF, it relies solely on Hitachi for machines, though this was not the case until early 1983, when its parent NatSemi stopped production of its AS series.

One cloud over the company's operations was the IBM lawsuit which accused NAS (along with Hitachi and NatSemi) of stealing its secrets. This was resolved recently with NAS emerging relatively unscathed – it had only to pay IBM's legal costs of $3.5 million, and it maintains its innocence.

The consensus among all Hitachi's distributors is that the so-called Japacan, with its provision for IBM to inspect all Hitachi's new processors before release will not affect the market.

In the future, there is the likelihood that NAS will expand its sphere of influence. One possibility is that it will take on Hitachi's S-810 array processor, able to do battle with companies like Cray. This would be a logical move as the company's top end 9000 series machine can act as a front end.

Hitachi is known to be at an advanced stage with a machine which will provide its answer to IBM's Sierra multi-processor mainframes which are expected around November this year.

There is still no sign of any agreement between the three distributors on market sharing, and so the sometimes bitter infighting to decide who will sell you a Hitachi processor continues.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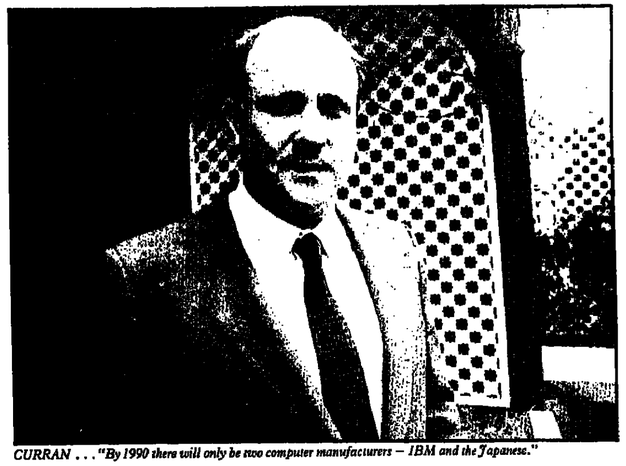
# Why it suits IBM to tolerate and contain its imitators

**The giant is simply not worried, writes Kevan Pearson, although from time to time it takes action to sort them out**



CURRAN . . . "By 1990 there will only be two computer manufacturers – IBM and the Japanese."

THE IBM plug compatible business is now over 10 years old and if US IBM watchers are to be believed it is hitting somewhere around 10% of IBM's business.

That is the level at which it has been said, many times, that IBM would take action against the companies involved. So is IBM gunning for their rivals? Will it put them out of business?

If we look back over the period since the US anti-trust (dominant company) case was dropped in January 1982, we can see a distinct change in IBM's behaviour both in the market and in the courts.

On the one hand, IBM has become very much more price-competitive, which has obvious implications for the plug compatible suppliers. As Bob Hogarth, who has just taken over as divisional manager of BASF's UK computer division, says 70% of the appeal of the lookalikes is financial, the other 30% is in offering superior support.

In the courts, IBM has gone from being the sinner (in the eyes of the law) to being the sinned against. Witness the trade secrets case against Hitachi, one of the major suppliers of IBM-compatible machines and peripherals, and National Advanced Systems (NAS), which sells the start-up ventures riding on the back of the IBM Personal Computer. Unfortunately, most of the companies were set up to exploit IBM's proprietary information. That is an echo of the allegations in the Hitachi-NAS case.

So IBM has certainly changed its whole attitude to competition. But it is not only the plug compatibles that IBM is worried about, if IBM is worried.

Nor is IBM worried about the Bunch (Burroughs, Univac, NCR, Control Data and Honeywell). It is said by IBM watchers that in terms of the number of new PUs shipped each year, the plug compatibles are now as big as the Bunch. Obviously, in overall terms, Amdahl, with its $778 million sales, is nowhere near as big as, say, Burroughs in revenue terms, but it could certainly ship as many CPUs in its own class.

So if IBM is not worried about the lookalikes, and it is not worried about the Bunch, what is IBM worried about and just why has it acted as it has done over the last two years or so?

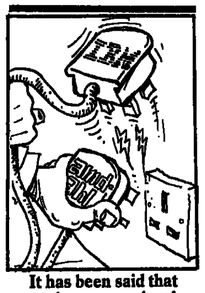
There are two threats looming on IBM's horizon: the newly deregulated American Telephone & Telegraph (AT&T) and the Japanese.

AT&T can safely be left out of any discussion of the plug compatible business, except for the fact AT&T is very important in IBM's overall picture, and that has serious implications for anyone else living in the IBM world. But AT&T is unlikely to get involved in the plug compatible business. It is far more likely to challenge IBM in the burgeoning office automation market.

The Japanese are far more significant rivals because they are the major suppliers of CPUs and peripherals. NAS and Amdahl, the two biggest plug compatible marketeers, both have major links with two of Japan's largest computer manufacturers: Hitachi and Fujitsu. As John Curran, vice-president with NAS, says: "By 1990, there will be only two computer manufacturers – IBM and the Japanese."

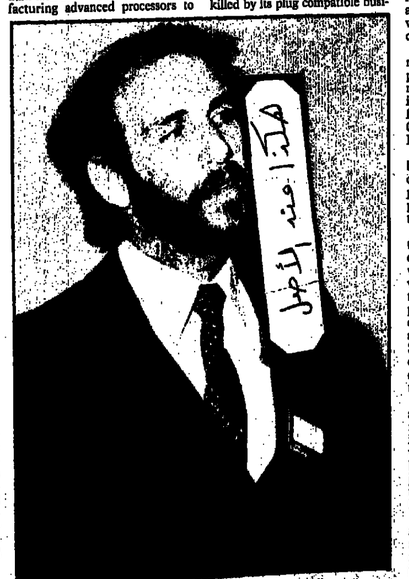
To deal with these two threats, IBM obviously wants to keep a close watch on what is going on in its own back yard. So while the plug compatibles don't figure largely in IBM's view of the world in their own right – it has even been said that at the very top level IBM executives don't even know they exist – they are important because they present an additional complication, and one which IBM from time to time feels the need to sort out.

They are active in just about every aspect of IBM's business – from software and applications – to hardware: discs, CPUs, personal computers and terminals.



**It has been said that at the very top level IBM executives don't know plug compatibles exist**

Undoubtedly, the most successful area has been CPU manufacturing. With IBM setting margins of about 60% on its largest processors, there has been plenty of room for third parties to undercut IBM's prices. But the first two successful suppliers – Amdahl and Itel – found that manufacturing advanced processors to compete with IBM was neither simple nor cheap.



KUTNICK . . . "It is when not if as far as XA is concerned."

Amdahl, founded by Gene Amdahl in 1970, was the first really successful maker of IBM-compatible CPUs. Others had delved into the market before, like Honeywell in its very early days, and electronics and telecommunications giant RCA, in the days of the 360, tried to take IBM on; it failed.

But Amdahl quickly realised the difficulty of adopting the IBM approach and doing everything itself, consequently a deal was struck with Fujitsu. Fujitsu took about 30% (early this month it upped its stake to 50%) and became a major supplier of basic components such as chips and boards to the company.

Itel, which was the world's largest leasing company, had two sources of supply: Hitachi, Japan's second largest computer manufacturer behind Fujitsu, and National Semiconductor. NatSemi picked up Itel's CPU business for a song and re-christened it National Advanced Systems (NAS) when the launch of the 43xx series in 1979 (with its massive improvement in price/performance) forced Itel into bankruptcy.

Both NAS and Amdahl are heavily reliant on Japan, even today. It is almost certainly true that there would not be an independent IBM-compatible CPU industry today without the Japanese.

Two factors enabled Amdahl to survive against the odds: Gene Amdahl, chief architect of IBM's 360 series, and Fujitsu. Between them they enabled Amdahl to offer technically and technologically advanced systems at a significant saving over IBM, even with IBM's massive manufacturing economies of scale.

Amdahl managed to come out with his first machine in 1975 and the company is still going strong today.

Itel, no longer with us, was not killed by its plug compatible business: it was killed by mismanagement, and the impact of the 43xx on leasing. Itel had cornered the market in 370/145s, 148s, 155s and 158s – the very machines whose values were decimated by the 43xx. Exit Itel.

NAS, which inherited the Itel user base, had a few difficult years immediately after the collapse of Itel, but it too is going strong now, with the technological backing of Hitachi, of course.

Life for the plug-compatible disc companies has been both better and worse. Memorex, Storage Technology and Control Data (CDC) have all competed in this market for years, and they have now been joined by NAS, Amdahl and BASF (another company which sells boxes built by Hitachi).

The CPU companies have moved very successfully into peripherals. Sadly, for the disc-makers, their attempts to move into the CPU business have been far from successful (except for Control Data which does not sell IBM-compatible computers).

Memorex was the first to try, back in the early 1970s. The costs of that project pushed the company to the brink of bankruptcy. It partly recovered but was finally taken over by Burroughs in 1981.

Storage Technology was next to try with an announcement in the early 1980s that it would make a whole range of CPUs to compete with IBM. But it was having trouble on other fronts. Two of its product lines – a 3370 compatible disc drive and virtual storage subsystem – were both dropped, and Storage Technology's earnings dived. IBM finally got its 3380 drive right and so the 3350 compatible business dried up.

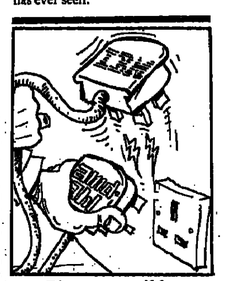
None of IBM's rivals was able to adequately respond to the 3380 in reasonable time: if IBM, with all its research resources, got it wrong, the plug compatibles were bound to hit problems. They are just coming to the market with their drives about 18 months after IBM.

Then, in January this year, Storage Technology announced it was stopping its CPU project: it had run into both technological and financial problems.

IBM's competitors have not had an easy ride, for reasons which have nothing to do with IBM.

IBM, for its part, has sought to put additional pressure on them through assiduous use of "FUD", fear, uncertainty and doubt. Gene Amdahl was first to use the term in public, but he says it was in use inside IBM for many years before the outside world got to hear of it.

It used FUD in various forms: leaks and unofficial pre-announcements, particularly to Wall Street IBM-watchers, technology and sometimes pseudo technology, and above all, through the finest marketing and sales force the world has ever seen.



**Plug compatibles can still offer a better deal, usually on better products than IBM**

But why did IBM let the plug compatible business start up in the first place, and why does it let it carry on today?

The answer is that in the 1970s, when the business really showed itself to be viable, IBM was in the middle of the most costly, complex and extensive anti-trust cases ever brought by the US government. Any deliberate action such as massive price-cutting or deliberate competition knocking would have been very bad for the anti-trust case.

The government wanted nothing less than to break IBM into several smaller organisations. If IBM had forced any of the lookalikes into liquidation through direct action, as it undoubtedly could have done, it would probably have lost the case. It was just the excuse the Justice Department was looking for. IBM had no intention of providing that excuse.

Instead, the company chose to launch new products strategically, like virtual storage, like the 43xx and like MVS/XA to cause maximum FUD. This worked and the plug compatibles had a few jittery years to start with. But they survived, by offering a better deal with IBM, and often superior products.

Amdahl, which has very strong links with Fujitsu, has just reported record results. And NAS, which settled its case out of court with IBM in January – still proclaiming its innocence – had a record nine months up to the settlement, according to its president David Martin.

He has always accused IBM of using the lawsuit as a marketing ploy. Although NAS was named in a civil case by IBM, it was not named in the criminal case in which Hitachi pleaded guilty.

Overall, IBM's attitude to the plug compatibles is one of containment. Even today, Amdahl and NAS, the two biggest, are barely as big as 2½% of IBM overall business.

They can still offer a better deal, usually on better products than IBM. So why have they not been more successful? Because of FUD.

The market exists because IBM is a conservative beast and plug compatibles can offer better performance for less money. They also offer better support, usually, and that can't be bad, because IBM's support is very good.

Extended architecture (XA) and the possible launch this year of the Sierra/Trout range are the major clouds on the horizon.

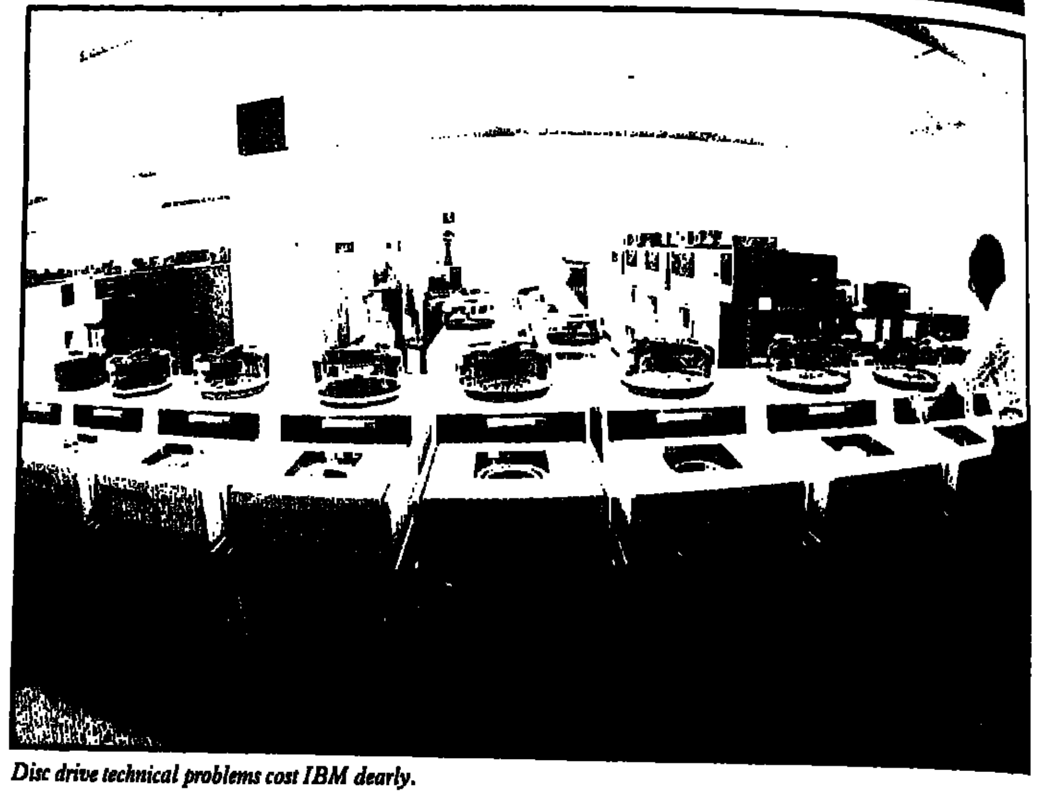
Pcm XA deliveries have slipped, but as Dale Kutnick, research director of the Yankee Group, says: "It is when not if, as far as XA is concerned."

Sierra shouldn't prove too much of a problem either. The plug compatibles are here to stay.

*Kevan Pearson is editor of* IBM System User.

The industry leader could quickly pull the plug on the plug compatibles says Steven Sonsino

# It pays IBM to leave gaps



*Disc drive technical problems cost IBM dearly.*

LATE last year, during one of the many anti-trust cases then proceeding against IBM, the EEC insisted that IBM publish full technical specifications of the interfaces it used in links to peripheral equipment. This would give the plug compatible peripheral manufacturers a fair chance of developing alternatives to IBM products early on in the life cycle of the IBM product.

IBM consistently refused to publish any such details, saying that to do so would give away important trade secrets. But it shows that IBM considers peripheral manufacturers and interfaces very important.

National Advanced Systems, a major plug compatible manufacturer, explains that one of IBM's strategies would be to encourage standards authorities to leave loopholes for plug compatible manufacturers in their interface specifications.

In this way, IBM would be able to control and even encourage the competition to go down just one path. It would force the competition to fill the gaps in the market that IBM cannot or does not want to fill in for itself.

One such gap was provided – albeit unwillingly – when the 3380 disc drive was launched by IBM, then withdrawn because of technical problems. It finally arrived on the market a year later – too late.

The problems themselves cost IBM dearly.

This opened up the market for companies like Memorex, Storage Technology and Hitachi. National Advanced Systems also has a compatible product, the 7380, and this is already installed on some UK sites.

Plug compatible manufacturers hold about 20% of IBM's peripheral market, but there is enough for everybody. Some observers believe IBM could put these companies out of business in 12 to 18 months if it wanted to, but it is unlikely to do so for various reasons.

IBM leaves gaps in the market that it is not prepared to fill. These gaps typically include difficult installations that need special hardware or software, and in IBM's eyes, such products will have a limited appeal. Other reasons are political, and some have legal, anti-trust implications.

IBM is as trapped in the compatible marketplace as are its plug compatible rivals. It has moved away in some areas – the excursions into extended architecture, for example – but the making of compatible products can only go on. The users hope so, anyway.

IBM has become more active in several key areas that it had no part in before. One major change is the company's attitude towards price-cutting. IBM appears to be far more willing to do deals than ever it used to be.

This is welcomed by users, but unsettling for competitors.

"When IBM starts cutting prices, you have to follow," says Chris Delve, sales and marketing director for Computer Peripherals (Systems), sole distributor for Telex equipment in the UK.

Telex is an American corporation that started selling IBM-compatible disc drives in the 1960s. After a number of anti-trust suits against IBM, the European arm of Telex was sold to Memorex in 1977. The company then restricted itself to selling peripherals to the US domestic market.

There was a four-year moratorium on Telex selling into Europe, but now that is over, and the company is back with a range of peripherals for the IBM market. The range includes a 12-inch small screen terminal, the 178. This costs about £1,000, considerably less than the IBM product, the 3178.

Over 3,000 of these terminals have been installed worldwide, says Telex. They can be leased and on-site maintenance is offered. Telex hopes this package deal will tempt buyers away from the IBM salesman.

A product that fills a typical IBM gap is the 286F daisywheel printer. This prints bi-directionally at 70 characters per second. It attaches to any 3270 system, including the 15-inch 278 terminal from Telex.

A double-sided, double-density floppy disc drive and a 10 Mbyte Winchester are planned for Proffit, Telex's personal computer system.

In 1982, Telex achieved a turnover of $274 million, of which $211 million were provided by Telex Computer products. Telex has delivered over 100,000 3270-compatible units, and in September its manufacturing plants doubled their capacity to 6,000 units a month.

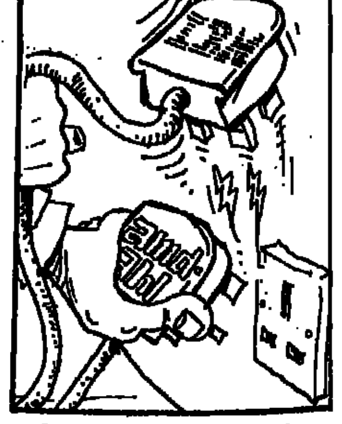
The agreement for Memorex to sell 3270-type equipment expired in 1981, and the company returned to selling only its own range of peripherals, mainly the range of mass storage products.

About three years ago Memorex was about to go broke because of the huge debts it had incurred over the previous three to four years. At the last minute, however, Burroughs bought the ailing company, and paid off its debts, with $155 million. Many said that Burroughs was foolish.

But it now appears this was a shrewd move by Burroughs. In just 12 months, Memorex repaid Burroughs (in cash) more than Burroughs had paid for Memorex in the first place, including debts.

Acquiring Memorex has given Burroughs a place in the plug compatible peripheral market and a bigger captive base on the OEM side. Burroughs makes only one request of Memorex – that any new products are fit either for the IBM market, the Burroughs market or the OEM market. This seems to work quite well for most of the Memorex fixed disc drives, the 5.25 inch ones in particular.

Memorex is about to introduce a 5¼-inch removable hard disc



**IBM is as trapped in the compatible marketplace as are its plug compatible rivals**

drive, which has already generated a lot of interest, particularly from ICL. There are also certain established personal computer manufacturers interested which might wish to turn the drive into a subsystem product for their micros.

Few companies are actively involved in the optical disc store market, but already there is a diversity of products that makes standards talk inevitable.

The units emerging for evaluation and installation are eight, 12 and 14-inch drives, and most of the disagreement appears to be in the 12-inch area. This is because it is where most of the drives are.

Optical drives appear to be aimed at the 16- and 32-bit minis and microcomputers. Because of this, some manufacturers are making their products compatible with the small computer standard interface, SCSI, which many of these machines use.

Shipments of the 7600 optical storage sub-system from Storage Technology are expected in 1984.

*Steven Sonsino is features editor of Systems International.*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# PC lookalikes are under fire

**While IBM decides how similar is 'similar' in court, PC compatible makers may find it tough, says Robert Piper**

UNTIL very recently there seemed to be a widespread belief amongst business micro manufacturers that IBM was not over-concerned about the burgeoning number of IBM-PC compatible machines appearing on the market. In fact, some observers believed that IBM passively encouraged the practice by allowing third party systems designers and software houses easy access to the PC's open architecture.

What brought about a policy change at IBM is a matter of speculation, but its recent actions against Corona Data Systems and Eagle Computer for copyright infringements must be seen as warning shots across the bows of all compatible manufacturers.

Whether IBM intends to take similar actions against other offenders is not yet clear, but there can be no question that it has the legal muscle to make life very difficult for them, and the next few months could see some fundamental changes in the market place.

The IBM-PC has never been regarded as a technically advanced machine. Based on a semi 16 bit processor, the Intel 8088, and providing, in the most popular set up, dual 320K disc drives and 128K of RAM, it could be asked why other manufacturers should want to copy such a mundane design.

If the machine had not borne the magic letters "IBM" it would probably have been doomed to a life collecting dust on dealers' shelves. The tremendous respect those initials commanded in the office environment gave it enough impetus, espcially in the US, to initiate the self-sustaining cycle based on the premise that the more users a machine attracts, the more software is written for it. In other words, the more software the machine has, the more users it will attract.

A PC-compatible should be able to run almost all the software currently available for the IBM. It should also be able to accept all the hardware enhancement options available for the IBM, currently reaching staggeringly high numbers in the US without the need for any modifications.

PC compatible manufacturers attract customers away from IBM by offering two main incentives. The first and primary incentive is one of an initial cost saving.

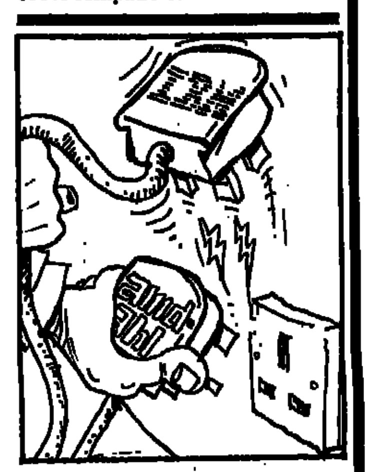
The second incentive is to offer a greater expansion potential by increasing the number of bus extension slots for extra cards on the motherboard.

PC-compatibles invariably have a very similar hardware specification to that of the IBM. An 8088 processor, dual 160K or 320K disc drives, and 128K of parity checking memory are proving to be the norm. Keyboards are often an exact copy of the IBM layout, even to the extent of the peculiar and much criticised return and shift keys, although some offer an option to have these replaced by the more acceptable variety.

Software compatibility is much harder to assess as it obviously does not lend itself to simple visual checking. The heart of the IBM, and the area where copyrights are most easily enforced, is the machine's basic intelligence held in ROM.

IBM chose to use Microsoft's PC-DOS as the operating system for its PC.

The acceptance of IBM compatibles in the market place has not been as widespread as many expected. There has been a marked reluctance by potential customers to commit themselves to buying what could actually be described as a cheap copy. Compatibility is not a cut and dried issue and no machine, as yet, has proved to be 100% compatible.



**IBM has the legal muscle to make life very difficult and the next few months could see some fundamental changes**

Even if IBM software does perform faultlessly there is a possibility that any future up-dates will not, because IBM PC-DOS and ordinary MS-DOS operating system are not necessarily updated in the same way each time.

Another possible disadvantage with purchasing a compatible could arise from the unknown quality of the back-up and maintenance facilities. With its PC, IBM offers a very comprehensive service agreement and hand picks all its dealers. It also promises replacement units if a faulty one has to be returned to the workshop for repair.

There are rarely such guarantees from compatible manufacturers, as many are imported from the US by UK distributors who sub-contract their service agreements to third party computer maintenance companies whose efficiency may vary.

IBM-compatible pricing policy is also becoming more critical as the cost of non-compatible micros plummet. With machines like ACT's Apricot selling at approximately £1,000 less than a similar spec IBM and still offering a worthwhile selection of software, customers may decide that they do not want to pay such a premium for IBM compatibility.

IBM itself is probably not concerned by this as its reputation can, to a certain extent, justify a higher price, but if compatible manufacturers link themselves too closely to IBM's pricing structure, they could find themselves looking increasingly uncompetitive in the overall market place.

The range of 8088/8086-based micros can be divided into four groups related to compatibility with the IBM-PC. The first group is incompatible, and cannot even read IBM data discs.

The second group is data compatible and can read IBM data discs but cannot run IBM software.

The third group is functionally compatible and, as well as reading IBM data discs can run modified IBM software. The Texas Instruments Professional is the most notable example in this group.

These three groups will not accept any IBM plug in hardware enhancements and would not be normally described as IBM compatible.

The fourth group, which we will look at in greater detail, should run the mainstream of software written for the IBM-PC, accept IBM peripheral cards and present an identical user interface.

The first compatible in this group which arrived on the market a couple of years ago and is still one of the most popular, is the Columbia MPC.

The latest version includes a revised video board coupled to an amber screen monitor to give a really excellent display. The retail price of around £2,900 includes a suite of Perfect software comprising a word processor, a spreadsheet and a simple database.

Also featuring high in the compatibility league table are two computers from Eagle, another US company. Most popular is the Eagle PC-2 which includes two 320Kbyte disc drives and a keyboard which stows under the processor when not in use.

Another portable, which has been available in the UK for some time is the Hyperion. Probably one of the best looking on the market, it boasts a high degree of compatibility, two 320K disc drives, a seven-inch high resolution amber monitor, and a flimsy keyboard.

There are also three very good machines, the Compaq, the Corona, and the Chameleon, just arriving from the US.

British manufacturers have not so far been quick to jump on the PC compatible bandwagon. The Future FX-20 offers partial compatibility, but is a powerful machine in its own right, with dual 800Kbyte disc drives and at £2,000, good value for money.

Despite IBM's unexpected action against a compatible manufacturer, there can be no doubt that, in the short term at least, the number of PC lookalikes appearing on the market will continue to increase. The same, probably, cannot be said for the levels of compatibility that they will offer.

If IBM does pursue its policy of enforcing copyrights more rigidly, we may eventually see an unwritten set of rules governing how similar compatibles can be.

*Robert Piper is a freelance journalist.*

*The IBM-PC: Getting more protection.*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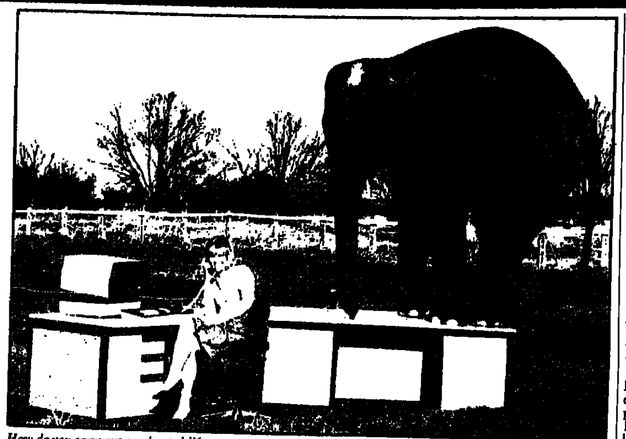
**PRODUCTS**

# Desks take the pressure

STC Components has introduced a range of professional work centres, desks and cabinets which have been tested using both a 2.5 ton distributed load of individual weights, and by getting a two-ton elephant to exert concentrated pressure on work tops – both actions proving the strength of the units.

Traditionally, work centres have employed welded sections in their construction, generally to strengthen the framework of the units and enable them to support a range of equipment from programmable control systems, peripherals, instrumentation etc, to standard office equipment.

But to provide the structural strength required, STC Components has developed an extrusion for the framework which, with the variety of accessories and novel half-depth pedestal options, not only provides versatility in construction, but allows up to 50% more equipment housing capacity than other systems in the same spatial area, says STC.



*How do you carry out accelerated life tests on a range of workstations? To check that initial proving tests were correct in indicating that the new range of Euroconsoles will be capable of carrying very heavy weights over a number of years, STC Components hired the services of a two-ton elephant to exert concentrated pressure on the units. The result, as can be seen, was more than satisfactory!*

Pedestals and cabinets accept all 19in subracks, chassis and panel-mounting equipment and power is supplied via internally or externally mounted distribution sockets.

Cables are housed in trunking which can be fitted exactly where cable forms are required.

**STC Components (CW), 190 The Strand, London WC2R 1DU. Tel: (0279) 26811.**

# System can interface 128 micro terminals

AN addition to the Burr-Brown family of industrial and commercial data processing equipment, the TMC900, is a communications processor for factory floor data collection systems and other multi-terminal networks.

It can interface up to 128 front-end Burr-Brown microterminals to a single communications port in the host computer and has an input response time of normally less than one second for any terminal.

TMC900 performs terminal polling, local validation, error recovery and basic transaction processing. Definitions of up to 100 transactions can be downloaded to the TMC900, and each transaction can have up to 10 prompt/reply editing specifications.

Unless specific validation by the host is required, the host will receive only the variable data for the transaction (tagged and time stamped) when the inputs are complete, says Burr-Brown.

TMC900 has an Intel 8085 5MHz 16-bit CPU in combination with two Z80A eight-bit peripheral microprocessors and a DMA controller to achieve high speed performance. A 128K RAM stores database information as well as data collected, and an optional 5¼in Winchester disc allows 10 Mbytes of unformatted storage capacity when long term standalone operation is required.

Serial interface to the host system is RS232C or RS422 communicating asynchronously to 19,200 baud. The operating and communications protocol is a polled command/response format.

The processor is housed in a fan-cooled 7.5cm Rack Mount which is 22.2 cm high; the front panel contains nine LED status indicators and a keylock on-off switch.

**Burr-Brown International (CW), Cassiobury House, 11-19 Station Road, Watford, Herts. WD1 1EA. Tel: (0923) 33837.**

# Teleprinter terminal comes in briefcase

TELEPRINTER Equipment is introducing a new version of the portable Victor teleprinter terminal.

The innovations on the model include the facility to operate from either 110V or 240V electrical supply, and a built-in acoustic coupler which adjusts to accommodate all telephone sizes.

The new machine comes in a briefcase format and weighs, with case, just 15 lb. It has an optional internal modem to CCITT requirements and enables users to plug into computer systems from anywhere in the world.

One of the Victor's advantages is the use of plain telex paper to keep operating costs down.

Print speeds are 55 chps at 10 cpi and 80 chps at 15 cpi, operating up to 1,200 baud. Full graphics are possible with a 120 by 60 dpi capability and the options of 4K or 16K edit buffers are available with both KSR and MSR versions.

**Teleprinter Equipment (CW), Akeman Street, Tring, Herts. Tel: (044282) 4011.**

*The upgraded Victor portable terminal.*

# Link-up to Wordnet

WORDNET International has added the Rank Xerox 600 Series of electronic typewriters to its office networking system, the WordNet 2000.

WordNet is now able to link most models of the Rank Xerox range into the 2000 office linking system which enables each typewriter to act as an input terminal to a word processor. The data is sent to the WordNet CPU as each page is finished.

Up to eight electronic typewriters can be linked into the system including those from Olivetti, IBM, Triumph, Adler and Olympia.

The Rank Xerox 600 Series incorporates automatic correction, carrier return, emboldening, underlining and character memory.

**WordNet International (CW), Tel: 01-630 5251.**

# Streamline connection

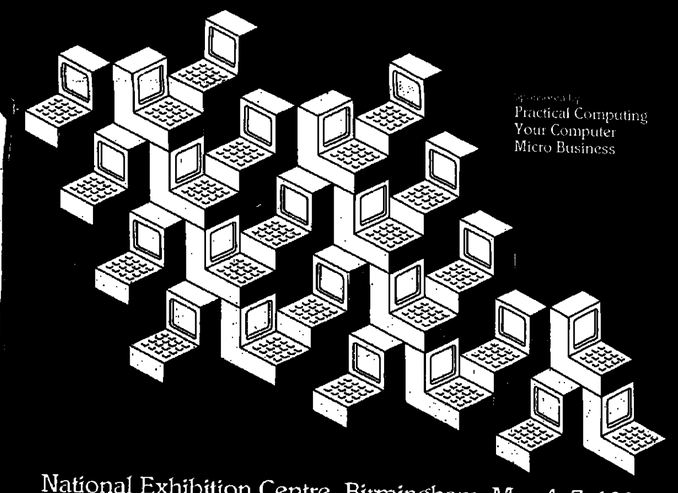
THE Jaguar Streamline is a device enabling computers to connect to the new telex lines now being provided by British Telecom. It takes Ascii asynchronous instructions from a computer port or terminal and automatically connects to the requested remote telex location.

The user dumps the complete text of his message into the large buffer in the Streamline which performs all code and speed conversion on behalf of the user, says Jaguar.

Typical uses of the Streamline are the connection of minicomputer ports to the telex network and the provision of a telex gateway for an asynchronous terminal network.

**Jaguar Communications (CW), Elton House, London Road, St Albans, Herts AL1 1LJ. Tel: (07727) 32985.**


Success Breeds Success



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## PEOPLE

■ Bernard Cohen (above) of Standard Telecommunication Laboratories (STL) has been appointed to the newly-established Racal chair of Information Technology at the University of Surrey. He will be responsible for the software and control systems group of the Department of Electrical Engineering and Electronics and for the teaching of software engineering at undergraduate and postgraduate levels. In 1979 Cohen founded what is now the Systems and Software Technology Division of STL. Since 1980 he has held an associate readership in the Department of Electrical Engineering of Brunel University.

■ David Myatt has joined Harris Digital Telephone Systems Division in Slough as a sales executive for the company's 110, 400 and 1000 line PABXs in the North. He previously held a similar position with Plessey Communication Systems.

■ University Computing Company (UCC) announces the appointment of Paul E. Newton to the newly-created post of senior vice-president, UCC Software Products. Previously he was vice-president and general manager of the Systems Software Division. He joined UCC in 1968.

■ At Rank Xerox (UK), Bob Wheeler is appointed director of operations, having been director of planning, information and finance for several years. He replaces John Pemberton who is moving to a new position in Rank Xerox international headquarters as director, business strategy development. The role of director of planning, information and finance is taken by Paul Biddle. He has latterly been controller, Region One in Rank Xerox international headquarters. Roger Eades becomes director of quality.

■ Motorola Information Systems has appointed a sales manager to oversee the Southern region. He is John Milway, who from September 1982 until he joined Motorola's UK subsidiary, worked out of Dallas, Texas first as acting national sales manager for domestic US, then as national accounts sales manager.

■ Bill Barton (below) has been appointed manufacturing manager at Transradio. He was previously production manager at TI Gas Spares and before that with Clarkson International Tools. Transradio manufactures and markets RF connectors and cable for the electronics, data processing and broadcasting industries.

■ Network Systems Corporation has named Tony Gray as Northern European sales manager. His territory includes the UK, Scandinavia and the Benelux countries. Gray joined Network Systems from Data General.

■ Peter Bedells has been appointed sales and marketing manager of Sherwood Computer Centre, Romford. He joins following six years with ICL as account manager specialising in the insurance field, including the Lloyd's market.

■ Cybernex has appointed Bruce R. Fox as director of international marketing. His previous marketing experience includes appointments with the Bell Telephone Co. and Gandalf Communications. Cybernex UK subsidiary, Brent-Cybernex, names Colin Perry as area sales manager.

■ Package Programs has appointed Jane Rowland as a client support consultant and Mike Hardman as a sales executive in its Asset Management Systems Division. Rowland has spent the last six years with Datamation Systems in the United Arab Emirates, where latterly she was special projects manager responsible for setting up agencies and training courses at the National Computing Training Centre. Hardman has been in the US for three years, selling software packages for the defence and aerospace industries.

■ *Brian Cannon (right), Ian Goodman (centre) and Michael F. Lordan (left) have been appointed directors of Southwark Computer Services. Cannon is head of the software group; Goodman is responsible for systems analysis and programming; and Lordan is responsible for the company's data centre. The new directors join Nigel May, chairman; David Hayes and Colin Clayton on the board.*

■ Sheaffer has appointed Bob Fitzgibbon as MIS manager. He will be responsible for the data processing department, and actively involved in the general development of information management and systems development.

■ Chris Robinson has been appointed UK sales manager for Systematics International Microsystems. He was previously dealer manager for Vlasak Computer Systems and most recently dealer account manager with Peachtree International.

■ Psion, a UK microcomputer software company, has appointed Matthew Gaved, to head a new sales and marketing department. He joins from The London Tobacco Company.

■ Bull Peripherals UK has appointed a new technical support manager, John Hughes. His technical experience in high technology stems from 25 years in the Royal Navy as an electronics engineer, as an instructor training engineers at DEC and as training manager at Systime.

■ David Taylor (below) has joined Vicon Industries UK as managing director, with overall responsibility for Vicon's UK and European operations. He was previously UK sales director of Zenith Data Systems of Chicago.

## DIARY

**MARCH 26**

Electronic Design Automation four-day conference. BCS/IEE. University of Warwick. Contact IEE Conference Secretariat on 01-240 1871.

Computer Appreciation for Managers/Users; Database Concepts; Word Processing and Office Automation. MSS Services two-day courses, Worthing. For further details phone (0903) 34755/6.

Operator Training. Data Logic two-day course, London. £290. For further details phone 01-486 7288.

VSAM for Programmers. Data Logic three-day course, London. £370. For further details phone 01-486 7288.

IBM Mainframe Hardware and Software. Datasolve Education three-day course, London. £260. For further information phone Joan Clarke on 01-499 7099.

Local Area Networks. BIS Applied Systems' three-day non-residential course. Kensington Palace Hotel, London. £375 plus Vat. Details from Cherry Bigmore on 01-261 9237.

Database Systems Design; and Basic Business Systems Analysis. BIS Applied Systems' four-day residential workshops. Queens Hotel, Eastbourne. £630 plus Vat. Details from Cherry Bigmore on 01-261 9237.

Cobol Programming. BIS Applied Systems' 10-day non-residential course. Training Centre, London. £930 plus Vat. Details from Cherry Bigmore on 01-240 9237.

8100 Programming. Compower five-day course. £305 plus Vat. Training School, Cannock, Staffs. Further details on Cannock 2511.

Microcomputer Applications. Two-day workshop, Liverpool University. Further details on 01-709 6022.

**MARCH 27**

Information Technology in the Future. BCS Bristol joint meeting with IMS and Futures Network. Hawthorns Hotel, Woodland Road, Bristol. 7.30.

Data Protection Bill. BCS WP and OA Group with South-east sub-group. Prof Bryan Niblett, University College of Swansea. £2. Commerce House, 21 Scarbrook Road, Croydon. 6.00 for 6.45.

Computers in Diagnostic Medicine. BCS South-west. Bob Hunt. X-ray Dept, Room 5, Royal Devon and Exeter Hospital, Exeter. 7.00.

Reducing Energy Costs with Computer Simulation. Control Data Energy Technology three-day seminar, Plymouth. Free. For further details phone 01-240 3400, ext 3305.

**MARCH 28**

Current Perspectives in Health Computing three-day conference. BCS medical groups/nursing and primary health care groups. Birmingham University. £100 (£95 BSC or SG members). Applications to Mrs D. Scott, Management Services Division, NETRHA, St Faith's Hospital, London Road, Brentwood, Essex. Tel: 0277-228470, ext 27.

Merseyside Inter-Schools Computing Quiz Finals. BCS Merseyside. Room 137, Polytechnic, Byrom Road, Liverpool. 7.00.

Visit to NRCd, Hatfield 1984 — The Year of the Optical Disc. BCS Microform Group. Dr R. Barrett and A. Hendley, NRCd. 2.00.

Visit to Federation Brewery. Dunston Order Entry and Production Control. BCS Newcastle. Numbers limited. Contact Barrie Thompson on Sunderland 76161, ext 120.

Computer-based Aids for the Disabled. BCS Sussex Micro Group. Andrew Brown and CAAAT team. Postgraduate Medical Centre, Brighton General Hospital. 7.15 for 7.30.

Prolog for Lawyers. BCS Law Group. Merek Sergot, Imperial College. Room 309, Engineering Building, University College, Torrington Place, London. 6.00.

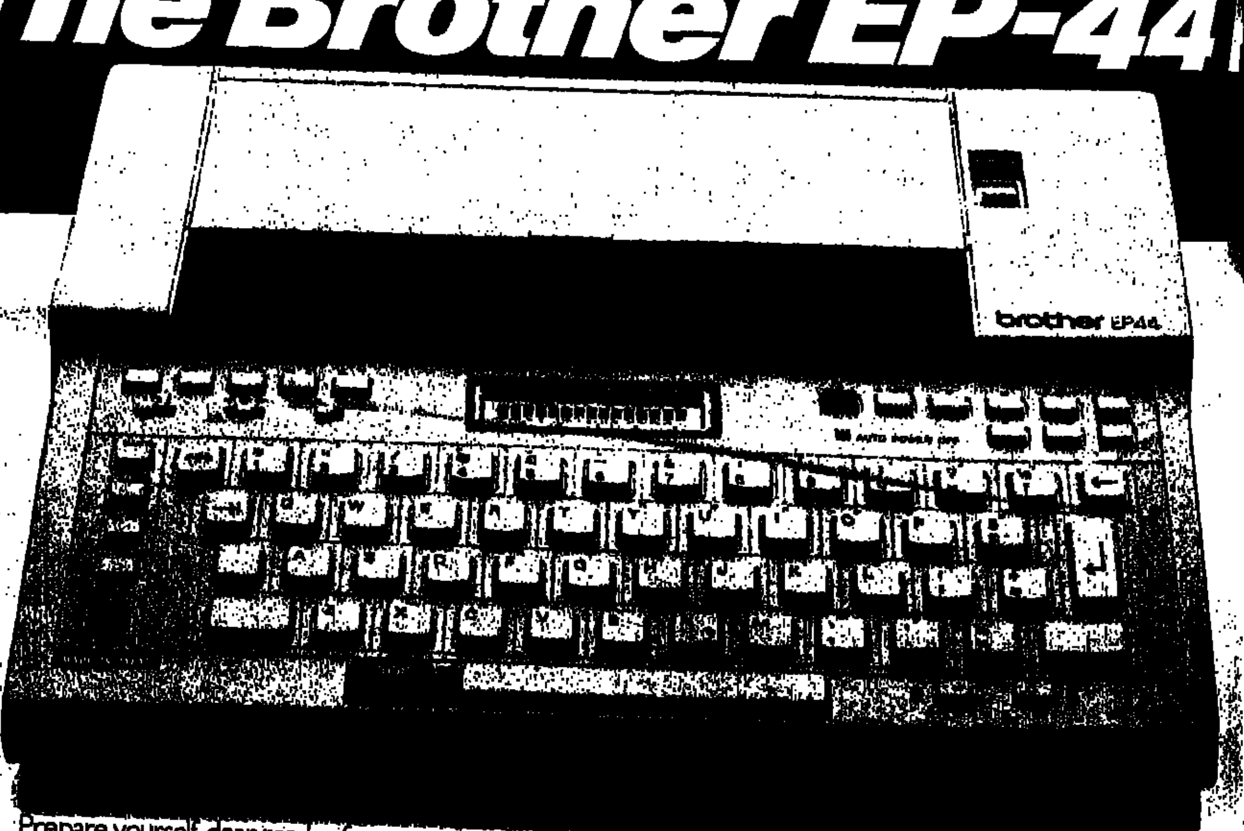
Colour in Visual Displays. University of Surrey three-day Easter school. Guildford. £180.

Introduction to the Micromputer. Merit Computers course. Stanneylands Hotel, Wilmslow, Cheshire. £95. Further details from Karen Blackshaw on (0942) 495821.

Record Handling Management. Polytechnic of the South Bank course, £55.

Second European two-day Conference and Exhibition on CAD/CAM Developments. Congrescentrum De Flint, Amersfoort, The Netherlands. Further details from Louise Marriott on 01-236 4080.


# The Brother EP-44 Portable Electronic. Amazing but true.



Prepare yourself, dear reader, for an encounter with the extraordinary.

For an alert mind is needed to grasp the full potential of the invention above.

The Brother EP-44.

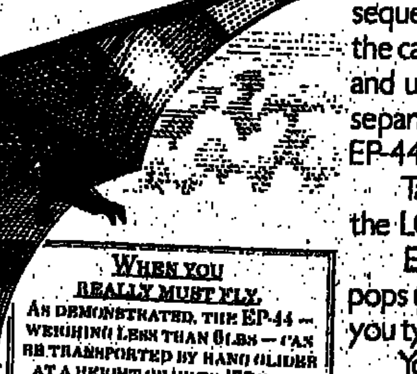
A technological masterpiece which is about the size of a telephone directory.

Yet which encompasses an entire range of office electronic equipment.

Electronic writer... computer terminal... computer printer... calculator... even telex machine.

On first inspection, the QWERTY keyboard seems disarmingly familiar. (Until you discover the host of international symbols also available.)

FASTER THAN A SPEEDING BULLET!
THE EP-44 ACTUALLY SENDS THE TYPEWRITTEN WORD INTO SPACE AND BACK TO EARTH VIA SATELLITE.
OR, OF COURSE, TO THE OFFICE NEXT DOOR IF YOU PREFER.



WHEN YOU REALLY MUST FLY.
AS DEMONSTRATED, THE EP-44 — WEIGHING LESS THAN 6LBS — CAN BE TRANSPORTED BY HANG GLIDER AT A HEIGHT OF UP TO 175 FEET. THE EP-44 CAN EVEN BE TAKEN ON A TRAIN OR PLANE.

A simple code sequence, and you have the capacity to review and update up to 4,000 separate characters in the EP-44's memory.

Take a quick look at the LCD panel.

Every character pops up on this screen as you type.

You can correct up to 15 of them before they even hit the paper.

Then whatever typewritten copy you choose to feed into the memory, text scroll viewing and editing facilities enable you to correct anything you wish.

Whether it means raising a point or dropping a para.

You'll find the EP-44 also specialises in mathematics homework.

From working out the latest exchange rates, to long division, thanks to its full function calculator.

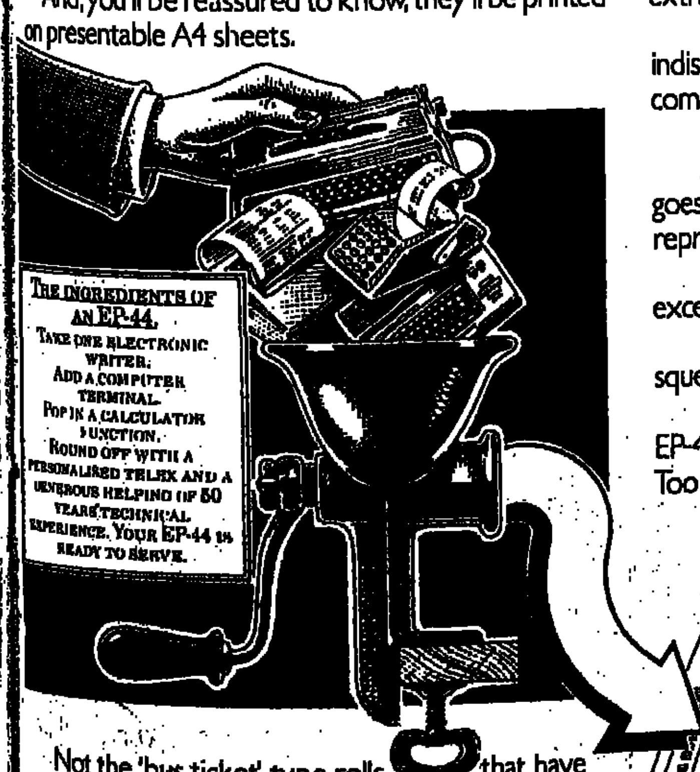
And getting from "Dear Sir" to "Yours faithfully" comes automatically to the EP-44.

As do paper insert, carrier return, centring, right margin flush and underlining.

Being a child of the computer age, the Brother EP-44 wouldn't be complete without an RS-232C interface.

Thus connected to your home computer, the EP-44 will reel off computer command lists simultaneously as you type them on screen.

And, you'll be reassured to know, they'll be printed on presentable A4 sheets.



THE INGREDIENTS OF AN EP-44.
TAKE ONE ELECTRONIC WRITER.
ADD A COMPUTER TERMINAL.
POP IN A CALCULATOR FUNCTION.
ROUND OFF WITH A PERSONALISED TELEX AND A GENEROUS HELPING OF 50 YEARS TECHNICAL EXPERIENCE. YOUR EP-44 IS READY TO SERVE.

Not the 'bus ticket' type rolls that have become annoyingly common on inferior printers.

But perhaps the most ingenious of the EP-44's myriad features is its capacity to send messages through space.

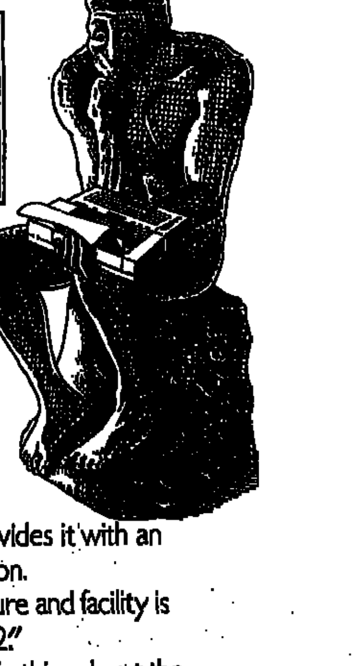
With the help of the humble telephone.

Link it to a receiver via an acoustic coupler and it will send your typewritten message to a similarly linked printer or Brother EP-44 anywhere in the world.

By way of satellite, land line or cable. An alternative telex, no less.

Enabling you to type in Bradford, on paper in Bangkok. "E.P. phone home" indeed.

HOW THE EP-44 REPLACES BRAIN CELLS.
THE EP-44 GIVES YOU BACK PARTS OF THE BRAIN THAT WOULD OTHERWISE BE EMPLOYED WORKING OUT PERCENTAGES THE HARD WAY, MEMORISING PAGE FORMAT, RECTIFYING TYPING ERRORS ON PAPER, ETC.



But the EP-44 is not confined to extra-terrestrial activities.

It will become an indispensable asset for anyone who communicates by the written word.

Inter-city or inter-office.

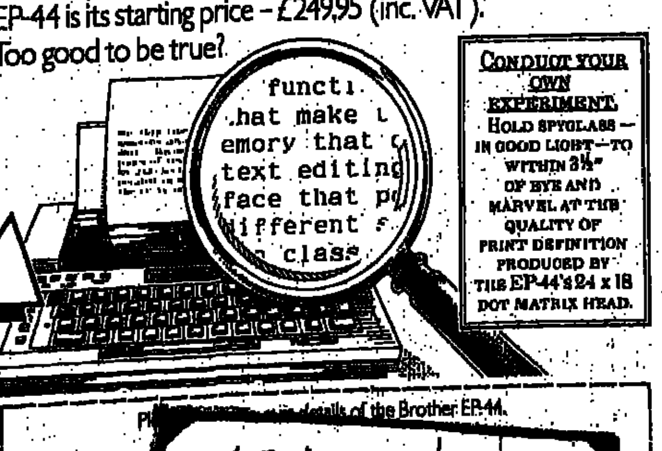
As you would expect, the EP-44 goes one better in the character reproduction stakes too.

Its 24 x 18 dot matrix head provides it with an exceptionally improved print definition.

Remarkably, every function, feature and facility is squeezed into a slim 13" x 10.3" x 2.2".

But perhaps the most remarkable thing about the EP-44 is its starting price – £249.95 (inc. VAT).

Too good to be true?




CONDUCT YOUR OWN EXPERIMENT.
HOLD SPYGLASS — IN GOOD LIGHT — TO WITHIN 3½" OF EYE AND MARVEL AT THE QUALITY OF PRINT DEFINITION PRODUCED BY THE EP-44's 24 x 18 DOT MATRIX HEAD.

... details of the Brother EP-44.

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Fast becoming the biggest name in typewriters.

DEPARTMENT T, BROTHER OFFICE EQUIPMENT DIVISION, JONES + BROTHER, SHEPLEY STREET, GUIDE BRIDGE, AUDENSHAW, MANCHESTER M34 5JD.

TEL: 061-330 6531 (10 LINES), 061-330 0111 (6 LINES), 061-330 3036 (4 LINES), TELEX: 669092. BROTHER INDUSTRIES LIMITED, NAGOYA, JAPAN.




## PEOPLE

■ *Two new management appointments are announced by BIS Software to co-ordinate the development and launch of new systems. As planning manager, Don Urquhart (left) will be responsible for the company's technical and market research and for planning and prioritising new products, as well as enhancements to current products. He has been with BIS for nine years, and previously worked for ICL and Sperry Univac. John Wills (right) becomes product marketing manager for BIS Software. He spent 15 years in banking before joining BIS in 1977, and was formerly general manager of BIS's Luxembourg offices.*

■ Aim has announced a number of appointments to its board. Clive Telfer, chief executive, also becomes chairman, while three senior managers have been named as directors: Michael Booth, currently company secretary; David Hewitt, general manager, professional systems division; and Keith Taylor, general manager, bureau services and supplies. Telfer spent six years with ICT (now ICL) before joining Aim in 1966 as computer services manager. Booth joined Aim in July 1977 as company accountant, having previously been employed for 10 years in a private accountancy practice. Hewitt joined Aim in 1968 as a trainee programmer, and was appointed sales and marketing manager of Aim Professional Systems Division in 1978, becoming general manager of the division in 1980. Taylor has more than 15 years' experience of the management and operation of large ICL mainframe computer installations.

■ The Computer Trade Association has voted Rod Cousens Person of the Year for 1983. He received the award primarily for his work in promoting the UK software industry as vice-chairman of the Guild of Software Houses (GOSH). Cousens is managing director of Quicksilva, whose games have consistently featured in the top ten best-sellers.

■ David Woodley (below) has been appointed managing director of Systematics International, a company in the Systematics International Group. He has 14 years' experience in the industry, is a former technical director with DDP of Basildon, Essex, and moved into the microcomputer field in 1980 as director of Compuskill.

■ Dick Osborne has been appointed product manager, personnel systems, within the human resources division of Package Programs. He joined PPL in 1980 as support mangager for the company's payroll and personnel systems, later being promoted to education and consultancy manager.

■ Robert Morgan has joined Peachtree Software International as production assistant, responsible for producing software sold to dealers, agents and licensees, and for the software library. He comes from Newcastle University. As a Peachtree account manager Yusuf Hassan will be responsible for supporting and developing Peachtree's dealer network in the South. He was previously responsible for the sale of software for Wang machines from 1982. Mick Gould, who has been appointed Peachtree dealer sales manager, is himself an ex-dealer. Michael Dwane has been appointed support consultant with responsibility for supporting licensee accounts, Peachtree dealers and end users. He was previously with Padmede Computer Services.

■ Keith Rolfe has joined Harlow-based multiline component distributor VSI Electronics (UK) as sales office manager. He previously held purchasing, sales and marketing positions within STC Electronic Services.

■ Control Data announces the appointment of Graham Thorne (above) as director of communications. Thorne joined The De La Rue Company in 1954, then spent eight months in Paris with Compagnie des Machines Bull as one of the five founder members of De La Rue Bull Machines which subsequently began operations in London. When De La Rue Bull became part of the computer interests of General Electric Company (US), Thorne became manager of marketing communications for GEIS where he was concerned with the inauguaration of the first major time-sharing service in the UK. He subsequently spent 13 years with Honeywell Information Systems where he became director of communications.

■ Three appointments have been announced at the Rhyl factory of Pilkington Fibre-optic Technologies. Robin McEwen-King, formerly general manager, becomes managing director; Julian Watts becomes technical director from technical manager; and Colin Briody becomes works manager from production manager.

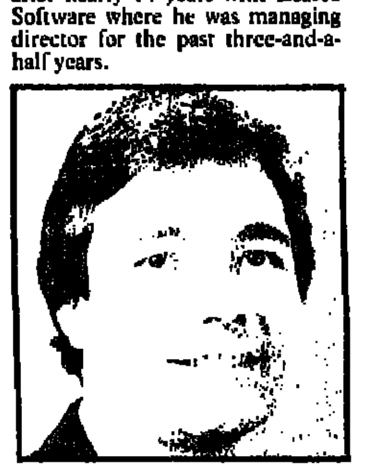
■ Brian Lynch, has joined BIS Applied Systems as a training development consultant with responsibility for EC3 and South-east London, Surrey, Hampshire and East and West Sussex. In 1972 he joined a UK-based international training organisation as an instructor for all types of data input equipment.

■ Phil Lewis (above) joins Peachtree as a projects manager with over four years' experience in project management for Rediffusion Central Services and Marcol Computer Systems. As a member of the development division of Peachtree Software International, Lewis' current responsibility is the implementation of the new version of the Peachtree Basic Accounting System (PBAS) over the range of major manufacturers' microcomputers and liaison between the various departments involved. John Woodgate has joined Peachtree as project leader for the team working on new European versions of POPS products. He previously ran his own company, Ashgate, and carried out ten months' freelance work for Peachtree.

■ George Dunford has been appointed managing director of IAL, the London-based technology systems and services group. He takes over from Jim Utterson, who remains chairman of IAL and managing director of STC Communications International, within which IAL operates as a subsidiary of Standard Telephones and Cables. Dunford joined IAL in 1955 as an air traffic controller at Tripoli.

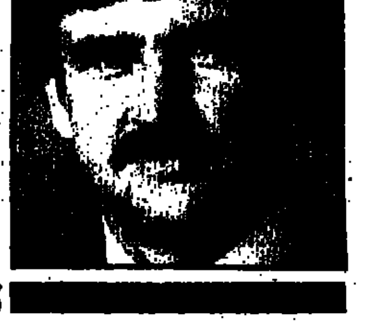
■ Lynwood, manufacturer of intelligent computer terminals, has appointed a new financial controller. He is Bill Coutts Donald, from Horne Brothers, the high street outfitters, where he was financial director. A Scottish chartered accountant, he previously worked for London Weekend Television and Rio Tinto Zinc.

■ David Markby is now deputy managing director of CSC UK (Computer Sciences Co). He joins after nearly 14 years with Leasco Software where he was managing director for the past three-and-a-half years.



■ Prime Computer (UK) has formed a City of London and South-east district under Denis A. Tebbut (above), a senior Prime executive, who has been appointed district manager. He joined Prime three years ago and has managed defence sales and city sales branches.

■ Carl Neun (below) has been named vice-president and general manager of Shugart Corporation marketing and sales division. Previously he was vice-president and general manager of Shugart's floppy disc drive division. He succeeds George Sollman, who recently left the company. Taking Neun's place as head of the floppy division is Paul Penney, who was vice-president/general manager of the company's Sunnyvale operation, a responsibility he retains with his new post. Neun joined Shugart as vice-president of finance in 1980, and took over the floppy division in 1982. Penney joined Shugart in July 1982 as assistant general manager of the rigid disc drive division and became vice-president/general manager of the Sunnyvale divison two months later.



## CONFERENCES

■ A SHORT course on computer ergonomics for designers, managers and users of computer systems is being organised by Tom Mayfield of HUSAT at Loughborough University of Technology. The course, Human Aspects of Computer Systems, is geared to commercial applications of computers and will run from April 8-13. It covers such topics as visual display and keyboard design, the computer environment, job design, user involvement and supports, system evaluation and trade union issues. Further enquiries to Tom Mayfield or Mandy Marshall, Department of Human Sciences on (0509) 212041.

■ THIS year's annual Decus conference at Exeter University, April 3-6, for the first time will include delegates from the Middle East joining those from UK and Ireland. This year the User Group is expected to give its supplier a tough time following a year which has seen cancellation of the mainframe Jupiter product, alleged shortcomings in personal computer software and widespread changes in top DEC management. A feature of the conference will once again be the lively DEC panel session. For further information contact Tania Morgan at the Decus Office, on Reading (0734) 853250.

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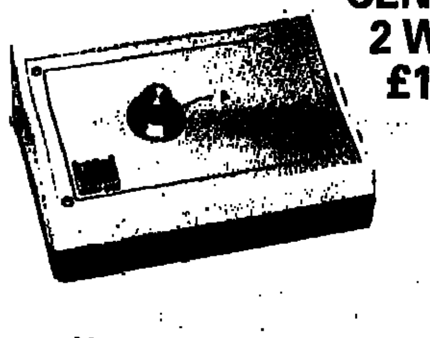

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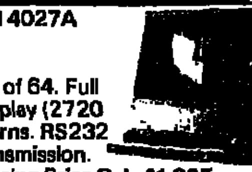

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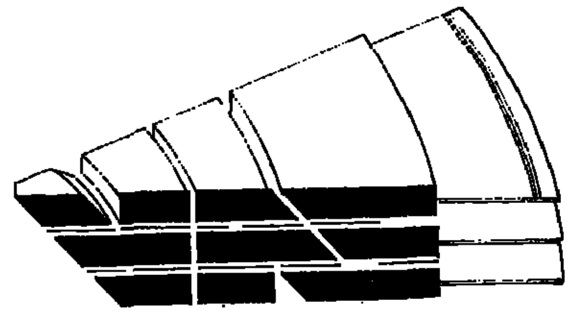

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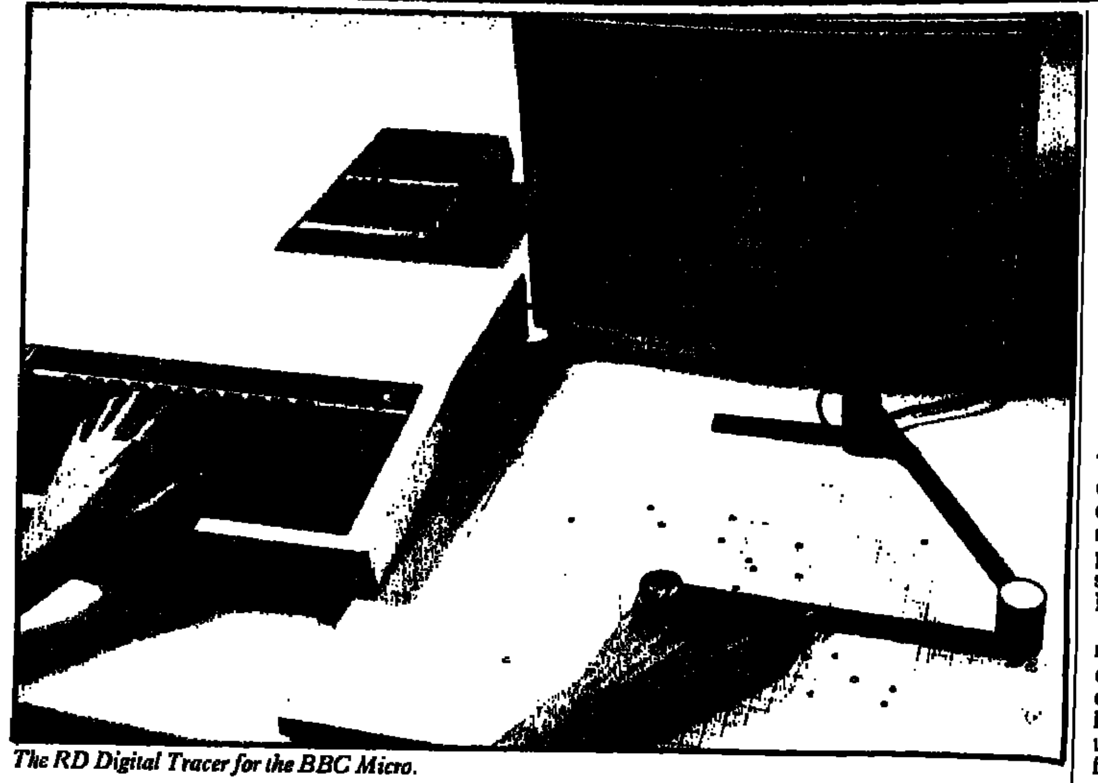
PRODUCTS

# Tracer for the BBC Micro



*The RD Digital Tracer for the BBC Micro.*

RD LABORATORIES has entered the field of graphics devices for the BBC Micro.

The Tracer consists of two pivoted tracing arms, with connections for immediate use with the BBC Micro Model B.

Robustness is a first requisite of the hardware, says Chris Marshall of RD. The product must withstand constant use by schoolchildren, and it is important for users to copy from atlases and thick text books.

The RD graphics device can do that, he claims.

The tracer uses high grade potentiometers, giving accurate reproduction over an A3 (420 x 300mm) tracing area. Most users have their own drawing surface, so a base-board is not included as standard.

The software is provided on cassette as standard, but disc-compatible software (on cassette) is available on request. This can be used in all the BBC colour modes, including Teletext, with a quick colour selection routine.

The basic drawing routines include thin and emphasised lines, with dotted line options. Another gives straight line joins between input points.

There is a series of geometrical constructions, vertical and horizontal straight lines, circles, rectangles and angles, which can be sampled and moved before entering. Text can also be sampled and moved before entry, so bar charts or pie-charts can be made up in seconds.

A selection of rub-out options is available, from screen-clear to deletion at a small point.

The display can be saved on cassette (or disc).

RD Laboratories (CW), 20 Court Road Estate, Cwmbran, Gwent. Tel: (06333) 74333.

# Bus controller adds dedicated power to data acquisition

THE facility to add dedicated computing power to a range of data acquisition, recording and analysis instrumentation is possible with a new bus controller system from Thorn EMI Datatech.

The Type SE2650, is a microcomputer-based system designed to control the functions of any IEEE-488 instrument. It is housed in a single, desk-top VDU unit incorporating twin 5¼in floppy disc drives, with a detachable alphanumeric keyboard.

The SE2650 is both software and hardware compatible with the Apple computer and can capitalise on a variety of interfaces.

The bus controller can be configured to drive a single instrument where fast data transfer and computation may be of prime importance, or in a multiple instrument configuration where complex measuring procedures and mass data storage is required, says Thorn EMI Datatech. This flexibility makes the controller suitable for use in the laboratory, in a production line ATE environment and in process control or research applications.

The system has 18 Kbytes of RAM for program generation and data storage, and the two floppy disc drives provide 320 Kbytes of permanent storage capacity. A fully configurable RS232C interface, a Centronics interface and IEEE interface are provided as standard.

The full alphanumeric keyboard incorporates edit keys.

The standard Type SE2650 system supports the Apple DOS 3.3 operating system, which runs the various versions of Apple Basic.

A special Applesoft compatible Basic called Busbasic, developed specifically for the controller is also provided as standard. Features included are serial or parallel poll configuration.

Pascal, Forth and Fortran are also available and special bus commands have been added to enhance each of these languages.

The CP/M software operating system is an option. Thorn EMI Datatech also undertakes to generate application software to meet particular requirements.

Thorn EMI Datatech (CW), Spur Road, Feltham, Middlesex TW14 0TD. Tel: 01-890 1477.

*The Type SE2650 bus controller system.*

# Graphics for commodity traders

A GRAPHICS system designed for use by commodity traders has been launched by Mintec. Called Comtec, it is a charting system which can present on a colour display terminal price histories of any range of commodities or stocks, the differences or ratios between commodities, draw trend lines, and apply analytical graphic techniques such as moving averages, momentum indices, and arbitrage comparisons.

It also employs specialist techniques to produce point-of-figure charting and interactive line drawing.

Mintec says variations of the system will be available to cater for other specific groups such as stockbrokers, financial analysts, and economists.

The system combines a DE5171 Taskmaster desk-top micro from Dicoll Electronics, with a Tektronix 4105 display terminal, and Mintec software.

The full system package, including hardware kit and software programs, sells for roughly about £20,000.

Mintec (CW), 16 High Street, Windsor, Berks SL4 1LD. Tel: (07535) 54232.

# Harris signs software agreement

HARRIS Systems has signed an agreement with Execucom Systems of Austin, Texas, to market and support Execucom decision-support software products.

The packages to be marketed immediately by Harris include IFPS (Interactive Financial Planning System), a general purpose, high-level language financial modelling system which provides the ability to perform "what if" simulations, optimisation sensitivity analysis, report writing, consolidations, and trend analysis; IFPS/Graphics, an integrated business graphics system; IFPS/Sentry, a data entry and validation system, and IFPS/Dataspan, a facility for transferring and formatting data.

The agreement also covers IFPS/Info Interface, which is an interface into the Henco data management system; IFPS/SCSS Interface, an interface into the SPSS conversational statistical package, IFPS/Personal, the integrated micro version of IFPS, and IFPS/GL, an interface into general ledger packages.

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The County Council do not bind themselves to accept the lowest or any tender received. All tenders should be submitted on the above-mentioned Tender Form, and should be delivered to the County Secretary at the West Sussex County Council at County Hall, Chichester, West Sussex in a plain envelope or package on or before 12 noon on 5th April, 1984. Nothing should appear on the outside of the envelope which would indicate the name of the sender.

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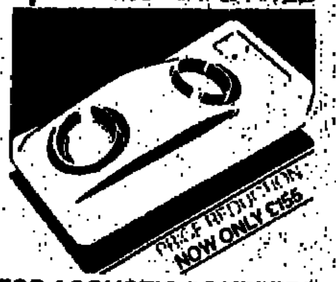

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## OPERATIONS

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**HONEYWELL DPS8** start April for 3 months plus in Essex. Ref: C23

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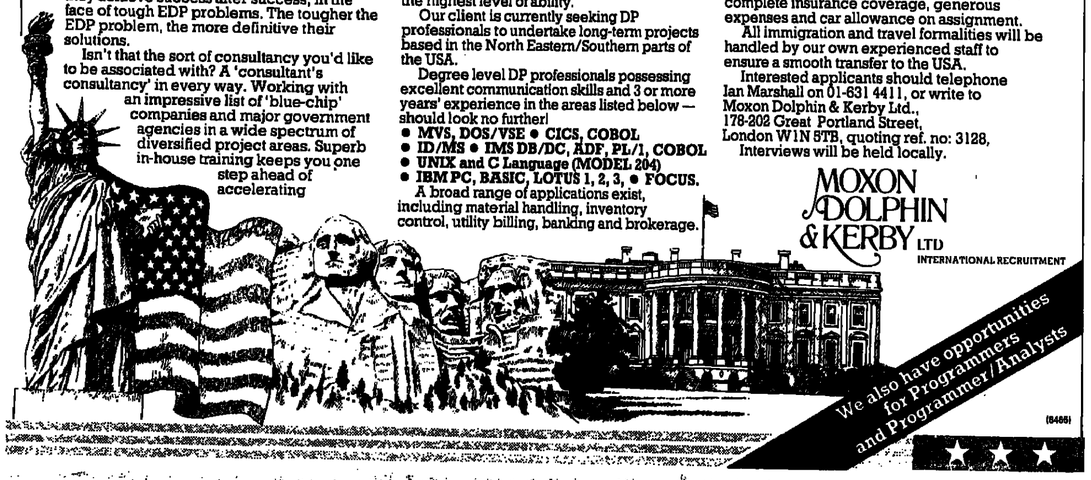

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Will have broad operations management skills in a medium sized IBM or DEC environment. Experience of a similar start-up situation involving installation planning will be highly attractive. You should naturally have sound man management skills.

**Our Client**

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You will assist the staff in identifying opportunities in qualified customer environments and quantify and qualify in technical terms in accordance with our product range/philosophies and assist in finalising contracts. You will lead a small but growing team of highly experienced sales support consultants and therefore you should be fully conversant with sales situations and the general conduct and behaviour required in them. You should also be free and willing to travel extensively.

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or
Experience of IBM systems software, specifically database management systems and data communications systems
★ Proven communication and presentation skills
★ Familiarity with the operation of a marketing and sales organisation

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The positions will provide opportunities for travel and will include extensive training, a quality car, BUPA, bonus plan and a first-class pension scheme.

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(8525)

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You will mainly be involved in pure consultancy, but also in project implementation and management.

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★ 32 bit machines and operating software
★ Sales, marketing or general management
★ Commercial OEM markets

It is possible that the successful applicant will have worked for or is currently working with an important 32 bit manufacturer already established in the OEM marketplace; DEC, Data General, Prime or Hewlett Packard for example.

**CONSULT THE PROFESSIONALS IN SEARCH**
**BOB BOWER Ref: CW 2203/3**

(8528)

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Even greater expansion of our Data Services Department is underway and we now wish to strengthen our team of computer professionals at our purpose-built data and communications centre in Jeddah. This modern operation supports a large IMS and CICS-based online operation, running on Dual IBM 3033 mainframes under MVS/SP1.3 with JES2, with JES3 currently under development.

### PROJECT MANAGERS
**ACP Passenger Service Systems**
**Range £22k-£27k Max £32.5k**

Saudia is currently planning to install for live operation in 1986 the following in-house automated systems operating under ACP:

★ International Reservations
★ Departure Control
★ Automated Ticketing/Fare Quotation

We are looking for people with proven experience in systems installation and development in one of these ACP areas or in ACP Operations or ACP Real-time Coverage/Support. You must have extensive experience in a large scale IBM online environment and ideally have a relevant degree though this is not essential.

### SENIOR SYSTEMS ANALYSTS & SYSTEMS ANALYSTS
**ACP Passenger Service Systems**
**Range £18k-£25k Max £29.5k**

To support these Project Managers, we are looking for people with less but substantial systems development and installation experience in these same areas.

In addition we require similar people for other areas each of which have their own specialities:

**★ Finance & Administration Systems**
You should have experience in systems analysis/design using structured techniques preferably YOURDON. A background in COBOL/CICS/VSAM is essential. Applications include: Personnel Administration, Revenue Accounting, Accounts Payable, Accounts Receivable, Statistics.

**★ Materials Management & Technical Services**
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The Flight Operations Information System (FOIS) scheduled for installation this year is the most comprehensive in the airline industry, utilising structured COBOL programmes using CICS and the TOTAL Data Base. Relevant experience in these areas is essential. Applications include: Crew Administration, Crew Management, Operational Control and Flight Planning.

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**Range £17.5k-£25k Max £29.5k**

We also require experienced ACP Systems Programmers, real-time coverage and operations personnel, including ACP Console Operators and staff experienced in ACP systems maintenance and support functions.

### SOFTWARE SYSTEMS PROGRAMMERS
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We need people to be responsible for maintaining the software system at the highest possible level. Major online systems under IMS and CICS are planned to be cutover late in 1984.
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★ The Control Programme Software Support Group has responsibility for MVS/SP, JES2 and all programme products.
★ The Network Software Support Group has responsibility for NCP, VTAM, NPDA, NCCF and TSO.
★ The Data Base Software Support Group has responsibility for IMS and CICS.

In each group performance and monitoring tools are available and experience of using these tools would be an asset.

### DATA BASE ANALYSTS
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You should have substantial experience in the area of Database Administration including several of the following areas: evaluation of new technology, design and implementation of databases, establishing standards and procedures, use and maintenance of DBMS software, data dictionary, problem determination and correction, tuning and data security.

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For informal discussion please call Peter Stevenson or Martin Kelly on 01-995 7755 ext. 138 or write with full c.v. to: Area Personnel Manager, Saudi Arabian Airlines, 508 Chiswick High Road, London W4 5RG.

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Their determination to be the most important supplier of Branch Terminal Networks to the country's largest financial and retail organisations has created vacancies within their Major Accounts Division. Two categories of Sales Executive are sought:

### SENIOR ACCOUNT MANAGERS
### BASIC £15K+ OTE £30K+
### GUARANTEED £20K+ & CAR

Applicants to these positions will immediately identify with the whole ethos of selling large distributed systems into financial and retail markets. Leaders in the field include BURROUGHS, NCR, OLIVETTI, NIXDORF, ERICSSONS, PHILIPS and IBM, and it is probable the ideal candidate has worked for one or more of them. A successful sales track record at the highest level and over several years is mandatory.

To you, our clients offer the opportunity to join arguably the most important supplier in these market areas and to earn extremely well while progressing on an excellent career path.

### TRAINEE ACCOUNT EXECUTIVES
### BASIC £12K OTE c.£24K
### GUARANTEED £17K & CAR

Our clients are also very keen to "grow their own" Senior Account Management.

They would be interested in talking to young executives with the right personal qualities, currently working for large Building Societies, Banks, Insurance Companies or Retail Groups. They would probably be employed within their company's Management Services or O&M areas, and have a very sound understanding of their particular businesses.
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Reference: CW2203/11

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For more information phone Keith Bartlett on Bristol (0272) 781111, Ext 2326. Alternatively please write to:
A. W. L. Mortimore, Personnel Officer with full career details.

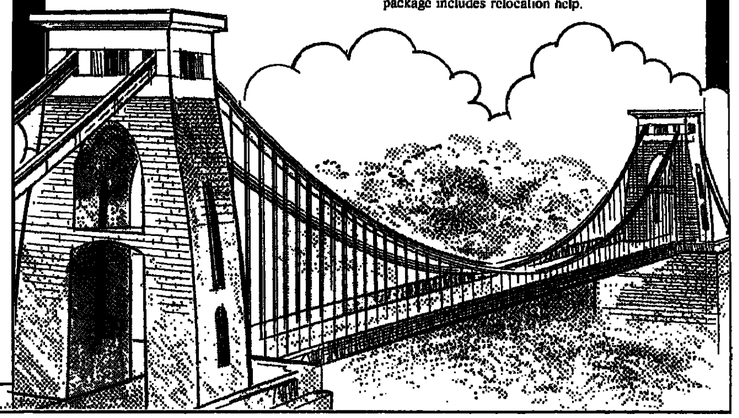
IMPERIAL TOBACCO LIMITED
**Imperial Tobacco Limited**
**P.O. Box 244, Hartcliffe, Bristol BS99 7UJ**

## Senior Analyst Programmers
## Analyst Programmers/Programmers
### to c. £11,500

We are undertaking extensive development work in our database and systems area and need experienced development staff to join our highly professional teams. The work includes developing many new company systems to meet future business needs.

Candidates ideally will be graduates or educated at least to A Level. Experience in PL1, MVS, TOTAL, CICS or MANTIS will be an advantage, although training is available to broaden your knowledge.

As part of a major group, our attractive benefits package includes relocation help.



# SALES DIRECTOR

**MICROS & P.C.s**
**COMMERCIAL TURNKEYS**

**BASIC £20,000 & CAR**
**NEGOTIABLE GUARANTEE**
**CENTRAL LONDON**

Our Clients are a fast expanding and highly profitable micro and P.C. OEM supplying commercial turnkey systems.

An excellent growth record and high profitability have attracted venture capital investment which enables the company to expand rapidly.

To help them do this, they require a Sales Director who is experienced in the market place and can substantiate a record of successful management and business development.

This is a superb opportunity for the entrepreneur to grow with an organisation determined to become number one in the supply of turnkey business systems based on new and advanced microcomputer technology.

Contact BOB BOWER, Advising Director.
Ref: CW2203/12

HUTTON EXECUTIVE SELECTION LTD. 31 PALACE STREET, LONDON SW1E 5HW. TELEPHONE: 01-630 0434 (24 HOURS)
Hutton
SPECIALIST RECRUITMENT CONSULTANTS

# PROFESSIONAL SERVICES

**SENIOR SALES ROLES**

**BASIC £19,000**
**OTE £30,000**
**CAR & GUARANTEE**

**LONDON & BIRMINGHAM**

Computer systems are increasing in complexity and in the variety of solutions available. The expertise required to advise on D.P. systems is therefore equally demanding, and our clients offer a comprehensive range of professional and consultancy services to help meet the ever increasing demand for professional advice.

With an excellent reputation built up over the past 15 years, they are now seeking experienced Professional Services Sales Consultants to help them continue to profitably expand the company.

We welcome applications from Senior Sales personnel with specific technical or commercial experience. A sound knowledge of the systems capability of IBM and/or major minicomputer systems manufacturers would be of particular interest.

Contact BOB BOWER, Advising Director.
Ref: CW2203/13

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# EXECUTIVE SEARCH

**SALES MANAGEMENT**

**£25K TO £45K+**

**HARDWARE SOFTWARE CONSULTANCY**

The majority of recruitment work carried out at Huttons falls into the "search" category. Broadly speaking, this involves us in specific retained recruitment assignments for a number of prestigious clients.

These positions are rarely advertised since, after a decade of recruitment experience in the Industry, we are quickly able to identify the correct environment in which to search, and the right people with whom to talk.

We may well have already talked to you, but if not, would welcome an opportunity of doing so to discuss the many assignments on which we are currently working.

Please contact BOB BOWER for an informal discussion. CW2203/14

CONSULT THE PROFESSIONALS IN SEARCH

[0452]

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# GOING SOLO....?

We are a rapidly developing Service Company providing support to Major Clients throughout the U.K. The Company is committed to continued growth of its computer facility and this is supported from Group level in Canada. Upgrading of our IBM 4331 is expected shortly and systems development, underway and planned for the future, is extensive and covers all aspects of the Company's operation.

## Systems Programmer to £9000

We seek a young enthusiastic Systems Programmer who is able to contribute at least one years experience of DOS/VSE along with exposure to a variety of DOS and CMS based products, ideally POWER, SORT, VSAM, XEDIT, EXEC2, etc. We are committed to extensive training where appropriate, to include CICS, PL1, DL1, etc.

The appointed person will take full responsibility for support of the system and will report directly to Management. We anticipate that this opening will appeal to an ambitious and self-confident individual who can react promptly to an ever changing challenge. A contribution to future development of the system will be expected.

Our team works in an open friendly environment in close contact with Users and Management. The package that we offer is typical of an Organisation of our standing, including 33 days holiday and regular reviews.

To break out and take this solo opportunity, speak with our advising Consultant **GRAHAME MURPHY** on **021 236 3781** (24 hour answering service) or 021 778 2974 (evenings 7pm-9pm).

**West Midlands.**

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NORTH 061-833 0427
BELGIUM 010 322 640 7151 71
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YOU WILL BE WORKING for one of the world's largest oil producers, on large sophisticated computer hardware. This is an opportunity not to be missed and a chance to bring your skills up to state-of-the-art level, and earn a lot of money – tax free!! There are over 20 places available, and one is tailor-made for you.

YOU WILL WORK in modern offices, drive the latest model cars on super highways and live in extremely comfortable accommodation, where there is a strong club spirit! (N.B. These are Bachelor Status contracts).

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★ SICK PAY
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★ FREE RETURN FLIGHTS every four-six months
★ Six to eight weeks' HOLIDAY each year

## THE JOBS – STARTING DATES ARE FROM MARCH TO JUNE

**PROGRAMMERS & ANALYST PROGRAMMERS**
**£20,000 TO £22,500**
★ Three to five years' experience of PL/1, TSO/SPF
★ IMS experience advantageous

**SENIOR PROGRAMMERS/DESIGNERS**
**£24,000 TO £25,000**
★ Seven to 10 years' experience of PL/1, TSO/SPF, IMS/DB
★ IMS-DC & ADF advantageous

**SYSTEMS PROGRAMMERS**
**£25,000 TO £32,000**
★ Three years' (minimum) experience of DEC/VAX

**SYSTEMS ENGINEERS**
**Up to £26,000**
★ WANG hardware and software interface to IBM/SNA

**SENIOR ANALYSTS**
**£28,000**
★ 10 years' experience
★ IBM background
★ User interfacing
★ Mini/micro experience advantageous
★ Long range planning experience

**ANALYST PROGRAMMERS – MAINFRAME/MICRO**
**Up to £22,500**
★ To convert applications to run on IBM PC
★ Micro-networking experience, preferably UNIX
★ PL/1, MVS, TSO/SPF experience essential

**TRAINING INSTRUCTORS**
**Up to £30,000**
EITHER
★ DEC/VAX applications experience
OR
★ IBM, MVS/JES2 or VM
★ Specialists in PL/1 and FORTRAN

**SCIENTIFIC/ENGINEERING ANALYST PROGRAMMERS**
**Up to £25,000**
★ BSc Engineering or related job experience
★ Four to eight years' overall experience
★ Preferably two years' as an analyst
★ PL/1, TSO/SPF, OS JCL, essential
★ IBM Project development methodology

**DATABASE ANALYST PROGRAMMERS**
**Up to £40,000 p.a.**
★ Database Model 204 experience essential
★ Five years' overall DBMS experience required

**ELECTRONICS ENGINEERS**
**Up to £33,000**
★ Degree preferable
★ Experience of message switching essential including either 2 EAX switches or GTD 1000 switches or C-1 EAX switches

For an application form and information Booklet, RING TODAY on 01-222 6722 and ask for CHRISTINA LEE quoting reference ME4 or alternatively return our FREEPOST coupon in our other advertisement on this page.



# CONTRACTS

## All these... Now

## IBM

| Location | Skills Required | Position |
|---|---|---|
| Oxfordshire | IMS-DB/DC TSO/SPF PL/1 | Analyst/Prog |
| Oxfordshire | MANUFACTURING BACKGROUND | Analyst |
| Midlands | MANUFACTURING BACKGROUND | Analyst |
| Berks | DOS/VSE CICS SNA VSAM POWER | Systems Prog |
| Berks | MVS UNIPAY OR UNIPERSONNEL | Analyst Prog |
| Berks | DOS/VS PL/1 CA-EARL | Analyst Prog |
| Surrey | IMS-DB/DC COBOL | Analyst/Progs |
| Middx | TWO-THREE YRS' EXP IN DB/DC + IMS AND MFS | Programmer |
| Herts | OS/MVS ASSEMBLER | Systems Prog |
| Hampshire | OS/MVS PL/1 IMS-DB TSO/SPF | Anal/Progs |
| Hampshire | OS/MVS PL/1 ISPF JCL | Anal/Prog |
| Hampshire | OS/MVS PL/1 IMS-DB/DC DATA DICTIONARY ISPF | Anal/Progs |
| London | IBM AND UNIVAC EXPERIENCE COBAL IMS-DB TSO/SPF | Programmer |
| London | IBM SERIES 1 RPS ASSEM | Programmer |
| London | IBM MARK IV TSO/SPF | Programmer |
| London | OS/MVS 30XX COBOL | Programmer |
| Surrey | COBOL CICS-COMMAND DL1/IMS | Programmer |
| Kent | 8100 DPPX DTMS COBOL | Programmer |
| Norfolk | DOS/VSE VM (VTAM) | Systems Prog |

## ICL

| Location | Skills Required | Position |
|---|---|---|
| Oxfordshire | ICL 2966 DME COBOL PLAN G3 | Programmer |
| Berks/London | 2900 IDMS TPMS VME | Prog/Snr Prog |
| London | ME29 COBOL IDMS | Progs |
| London | ME29 TME TP | Tech Support Specialist |
| Berks | SYS 25 ASSEMBLER | Prog + Prog Testers |
| S Wales | 2900 COBOL VME IDMS TPMS | Progs |
| Berks | 2900 OMAC VME IDMS TPMS | Prog + Snr Prog |
| Bedfordshire | TPMS IDMS 2900 | IDMS Designer + Snr Progs + Sys Testers |
| Berks | DRS20 PASCAL (+/–8086/8 ASS) | Progs |
| Birmingham | 2900 SCL VME/B TROUBLE SHTR + TECH SUPPORT | Tech Support |
| Berks | DRS DESIGN + IMPLEMENT OFFICE SOFTWARE | Designer/ Implementor |
| Berks | VME COBOL PASCAL – OFFICE SOFTWARE | Team Leader |
| Berks | ME29 COBOL TME | System Tester |
| Liverpool | G3 (MUST BE VERY GOOD) | Support Consult |
| Middx | ICL VME IDMS TP + DB TECH | Anal/Anal Prog |
| Herts | 2900 VME/B IDMS TPMS | Programmers |
| London | VME IDMS | Anal/Prog |

| Location | Skills Required | Position |
|---|---|---|
| Berks | VAX VMS PASCAL GRAPHICS | Prog/Analyst |
| Berks | M68000 MACRO OR ASSEMBLER OR C – SYSTEMS MAN | Analyst/Prog |
| Berks | PDP 11/70 PASCAL OR C | Analyst/Prog |
| Berks | RSX11/M ASSEMBLER +/– MACRO 11 | Analyst/Prog or Prog |
| Berks | VAX VMS PASCAL | Analyst/Prog or Prog |
| Herts | PDP 11 RSX11 MACRO 11 | Software Engs |
| Herts | INTEL CORAL +/– ASSEMBLER | Software Engs |
| Herts | INTEL ASSEM DEBUGGING | Software Progs |
| Herts | INTEL ASSEM COMPILER DEV | Software Progs |
| Herts | INTEL BCPL | Software Progs |
| London | NCR IMOS COBOL | Anal/Prog |
| Herts | Z80 CP/M ASSEMBLER | Software Eng |
| London | IBM/PC + APPLE DBASE2 BASIC | Anal/Prog |
| Sussex | TI 990 COBOL | Programmer |
| Berks | VAX VMS DATATRIEVE FORTRAN | Software Design/Prog |
| Kent + Sussex | PASCAL REAL TIME | Programmers |

## Specialists

| Locations | Skills/Positions |
|---|---|
| London | SYSTEM 25 CONSULTANT WITH NETWORKING COMMS EXPERIENCE AND ASSEMBLER |
| London | IDMS DESIGNER TO INTERPHASE WITH A PERSONNEL SYSTEM ON 2900 |
| Berks | SOFTWARE AUTHOR MIN TWO YEARS' EXP |
| London | SNR PROG WITH DEPT 25 APPLICATION EXP |
| Berks | VME TEST + VALIDATION SPECIALIST |
| Middx | TECH SUPP CONSULTANTS IDMS TPMS TO SUPPORT AND IMPLEMENT CONVERTED SOFTWARE |
| Berks | PROJECT MANAGER VME + VARIOUS ICL PACKAGES 2900 COBOL |
| Berks | PROG TESTER COBOL PASCAL ASS + DATABASE EXP ALPHA AND BETA TESTING |
| Berks | FIRMWARE WRITER ON INTEL OR ZILOG |
| Berks | SOFTWARE PROGS DRS PASCAL X25 COMMS AND SOFTWARE DESIGN EXPERIENCE |
| Berks | VME DESIGNER FOR OFFICE SYSTEMS |
| Sussex | SIMULATION SPECIALISTS ESP + SEL32 EXPER |
| Berks | NUMERATE DEGREE/RADAR SIGNAL PROCESSING/REAL-TIME APP/CORAL 66 OR FORTRAN/MASCOT/VAX SIMULATION/MATH MODELLING/PERFRM EVAL/COMPUTER GRAPHICS – SOFTWARE ENGINEER |
| Sussex | RF CIRCUIT DESIGNER (ANALOG) – EXPERIENCE IN MICROWAVE OR HF, RADAR RECEIVERS, RF TRANSMITTERS, ETC. |
| Hants | ATE SOFTWARE DESIGN OR MILITARY COMMS HARDWARE DESIGN ASSEMBLER + ANY MICRO |

## Other

| Location | Skills Required | Position |
|---|---|---|
| Berks | EXP OF WRITING USER MANUALS | Software Author |
| Berks | DOCUMENT MICROS FROM HARDWARE VIEWPOINT | Hardware Author |
| Hampshire | GEC 4080 4000 CORAL GRAPHIC OR MESSAGE SWITCHING | Programmers |
| Hampshire | PDP 11 CORAL RSX11/M REAL TIME BACKGROUND | Programmers |
| Middx | DG BASIC | Project Leader + Team Leader |
| Middx | DG BUSINESS BASIC | Programmers |
| Middx | DG DEBUGGING EXP | Programmer |
| Middx | DG ASSEMBLER AOS/VS OR AOS | Programmer |

## Minis/Micros

| Location | Skills Required | Position |
|---|---|---|
| Midlands | VAX VMS FORTRAN | Analyst/Prog |
| Midlands | VAX VMS COBOL | Analyst/Prog |
| Midlands | VIEWDATA SYSTEM | Analyst |
| London | MICRO BACKGROUND | Hardware Eng |
| Berks | GRAPHICS BACKGROUND | Hardware Engs |
| Midlands | VAX VMS MACRO PASCAL | Systems Prog |
| London | MV10000 AOS INFOS PL/1 OR COBOL GRAPHICS | Analyst Prog |
| Berks | PDP/11 RSX11/M + Fortran | Project Leader |
| Midlands | IPL ON DEC SYS 10 | Analyst |

## Overseas

| Location | Skills Required | Position |
|---|---|---|
| France | S38 RPG III FRENCH SPEAKING | Anal/Prog |
| Europe | IBM DOS/VSE CICS VSAM TOTAL SHADOW ASSEMBLER | Systems Prog |
| Saudi Arabia | DEGREE PREF – FIVE+ YRS' EXP – MESSAGE SWITCHING EXP OF NO2 EAX OR GTD–1000 OR C-1 EAX SWITCHES | Electronic Engineers |
| Saudi Arabia | THREE-FIVE YRS' PL/1 TSO/SPF – IMS EXPERIENCE ADVANTAGEOUS | Programmers & Analyst/Progs |
| Saudi Arabia | SEVEN-TEN YRS' PL/1 TSO/SPF IMS-DB – IMS-DC & ADF ADVANTAGEOUS | Senior Progs/ Designers |
| Saudi Arabia | THREE YRS' (MINIMUM) DEC/VAX EXP | Systems Progs |
| Saudi Arabia | WANG INTERFACE & SOFTWARE INTERFACE TO IBM/SNA | Systems Engs |
| Saudi Arabia | TEN YRS' EXP – IBM + LONG RANGE PLANNING + USER INTERFACING MINI/MICRO EXP ADVANTAGEOUS | Snr Analysts |
| Saudi Arabia | IBM-PC CONVERSION – PL/1 MVS TSO/SPF + MICRO-NETWORK EXP | Anal/Progs – Mainframe/ Micro |
| Saudi Arabia | DEC/VAX APPLICATIONS EXP OR IBM/MVS/JES2/VM + SPECIALISTS PL/1 FORTRAN | Trainers |
| Saudi Arabia | BSc ENG OR JOB REL EXP – MIN FOUR-EIGHT YRS – PREF TWO YRS' ANAL – PL/1 TSO/SPF OS JCL ESS – IBM PROJ DEV METHODOLOGY | Sci/Eng Analyst Programmers |
| Saudi Arabia | FIVE YRS' DBMS EXP – DATABASE MODEL 204 EXP ESSENTIAL | Database Analyst Programmers |

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Ramtek has been pushing forward the frontiers of computer graphics since it introduced the industry's first raster scan colour system in 1971. Current applications encompass business graphics, imaging, CAD/CAM, process control, command control, cartography, simulation, seismic, geological and medical imaging.

The new Ramtek 2020 uses the latest advances in VLSI technology and pipe-lined, co-processor architecture to set a new standard for colour graphics display generators – up to 35 times faster than conventional raster scan systems.

## Sales Executives
c £25K OTE + BMW 320i

As part of Ramtek's ambitious UK expansion plan, you will handle a number of established major accounts as well as move into new End User and OEM areas with their recently announced range of ultra-high performance Graphics Display Systems.

You will be qualified in a scientific/technical discipline and have ... CAD/CAM market place combined ... information contact Kathy Sinclair now on 01-637 9611.

**Ramtek**

## Senior Customer Engineer
c £11.5K + 2 Litre Estate

Ramtek's U.K. engineering team need a Senior Customer Engineer to head-up their excellent after sales support function.

With responsibility for in-house, field and preventative maintenance services throughout the U.K., applicants should be based within 50 miles of Basingstoke (relocation possible).

Applications are invited from Computer Engineers with 2/3 years experience of mini/micro (preferably CAD/CAM) systems, who would enjoy the rewards of working in a highly professional small team environment. For further information contact Kirk Blackmore now on 01-637 9611.

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION



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We have been retained by a major company in the United States of America to supply 30 experienced computer programming personnel for 12-month contracts. The locations are varied but include Baltimore, Boston, Washington, Chicago, Philadelphia and New York. Prospective candidates should be available to start any time between now and June 1984. The skills required are:

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★ ICL or IBM IDMS with COBOL
★ UNIX and C

An excellent package is offered and will consist of the following:

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★ Support from our U.S. office in Boston

Programmers who are currently in permanent positions are welcome to apply for these positions.

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To discuss these opportunities please telephone Steve Whiting or Sandra Carey on: Farnborough (0252) 516141.

(8138)

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GST's microprocessor group is involved in a wide variety of technically challenging projects ranging from consumer software to industrial control systems, and from special purpose hardware to high volume product design and scientific instrumentation.

Applicants with detailed knowledge of at least two microprocessor systems and a thorough grounding in Assembler and hardware design experience or one other high level language will have a distinct advantage.

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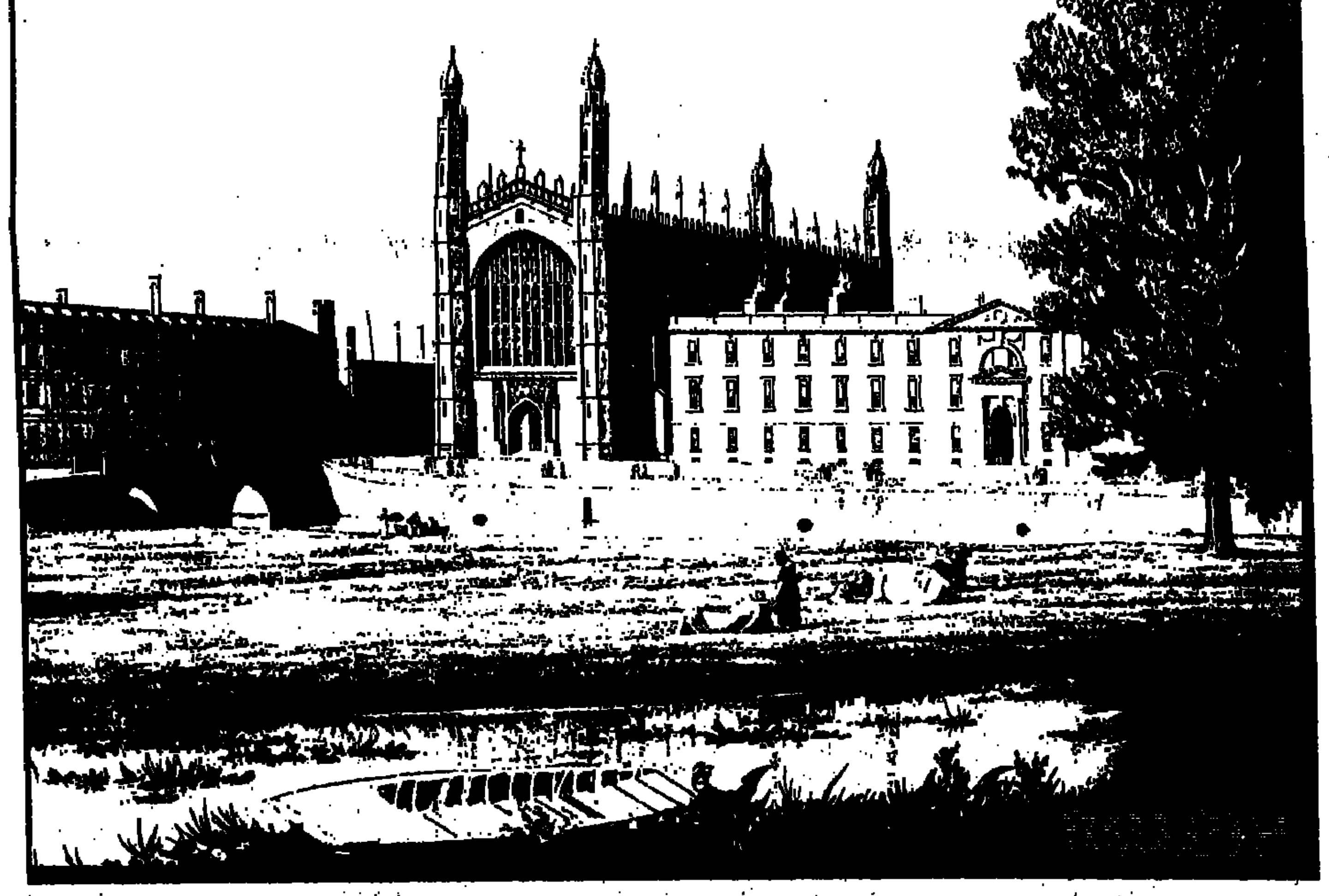
To apply please send a full CV to GST's consultant Jenny Dalrymple-Hay (or Ian Murray West) at Dalroth & Partners, 4 Half Moon Street, Mayfair, London W1, or telephone for more information or an application form on 01 493 2947 8 a.m. – 10 p.m. Monday – Friday (Weekends 049 46 4579). Ref 5043.

If your career profile does not exactly suit our requirements please still apply. (8524)



# MICRO SYSTEMS OPPORTUNITY

**The company:** Kall-Kwik Printing (UK) Limited, a leader in the fast growing quick printing industry.

**The position:** Informations Systems Manager

**The job:** To assume full responsibility for the creation and implementation of a nationwide, stand-alone microcomputer system at our retail outlets. To be responsible for the ongoing management of the microcomputer department at our head office in West London and the development of a computerised accounting system.

**The person:** Will have sound experience of microprogramming, systems design and control, gained in a commercial environment. The successful applicant will be hard working, mature in outlook, highly capable, self-motivated and at ease with all levels of personnel.

**The package:** An attractive salary in five figures, a company car, a stimulating work environment and the chance of real job satisfaction.

For more information apply to

Kall-Kwik PRINTING

The Financial Controller
Kall Kwik Printing (UK) Ltd.
South Ruislip
Middlesex HA4 0JF (8479)

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The appointed person (male/female) will be required to have had at least three years' experience as a programmer/analyst or senior programmer within an ICL environment. Preferably ME29 knowledge of Omac 29 or manufacturing systems together with 'on-line' processing, particularly TPS and range Cobol is essential.

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Benefits include pension, ill-health and life assurance schemes, basic 35-hour week and generous holidays. Relocation will be paid where appropriate.

Write or telephone for an application form, quoting reference 15/84, to:

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Radcliffe Road
Bury, Lancs BL9 9NB

061-764 6030, Ext 327 (8270)

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Come and talk to us about developing your skills by helping in software applications package development for on-line distribution systems.

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APT

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Ask for Allan Sanders – UNIX Recruitment Consultant.

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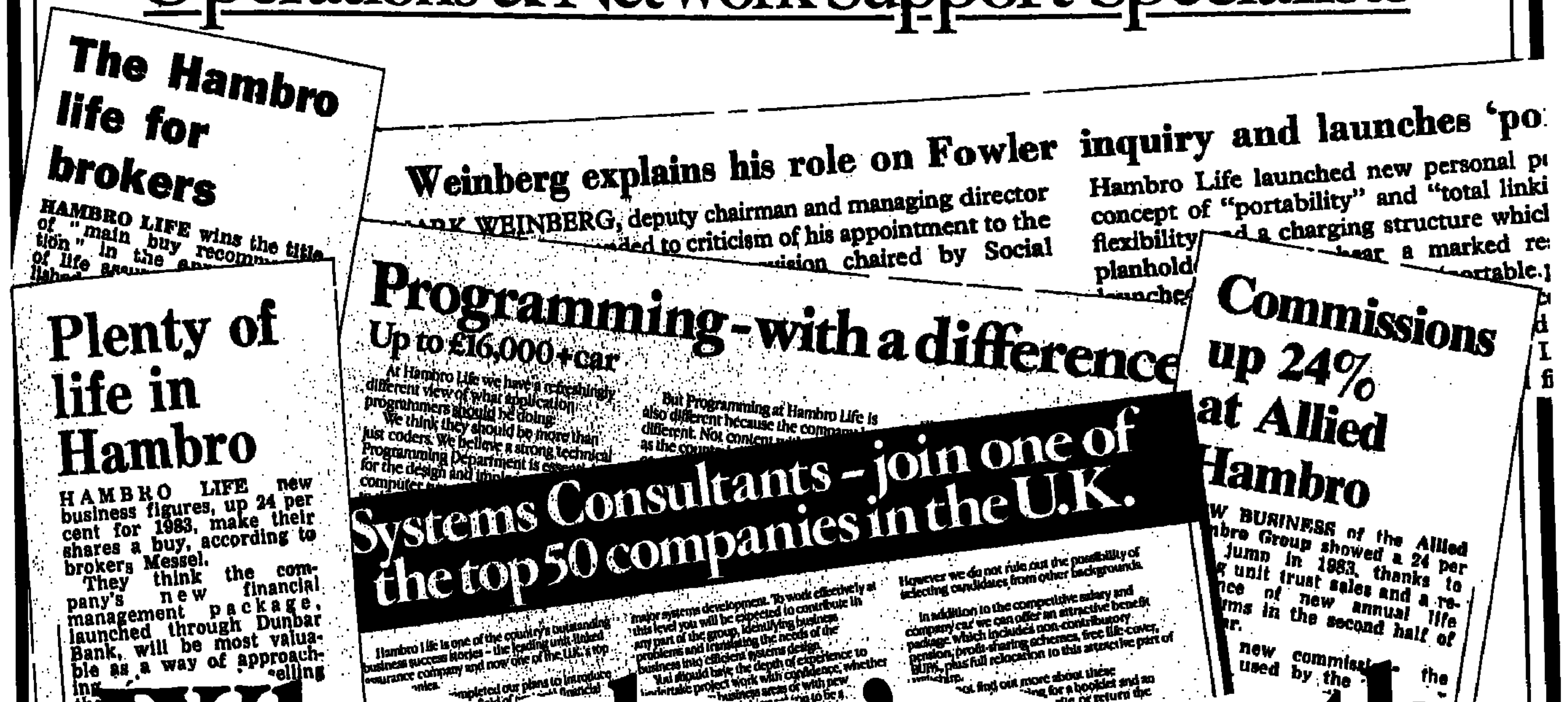


# Where there's growth, there's Hambro Life

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Operating today as part of the Allied Hambro group of companies, Hambro Life is growing on all fronts, and this growth in business is made possible by the integrated computer systems which support our Administration. Our use of technology has, therefore, grown as the Company has grown.

And you don't have to look for the evidence – the expansion of work in D.P. has meant that recently we've been advertising in the computing press for more first-class people to join our Systems and Programming departments.

We can also offer career growth based on pure technical merit, and the contribution made by our Operations & Network Support Specialists has always been recognised and generously rewarded.

In short, if you're not thoroughly appreciated where you are now, you will be at Hambro Life and specifically in the following positions:

### NETWORK SUPPORT SPECIALIST up to £13,000

Our Network Support area is looking for another specialist, with experience in Network installation, problem diagnosis and fault fixing. You should also have the ability to explain technical problems to non-technical users.

### SENIOR PROJECT ANALYST up to £13,000

This is a senior vacancy in our User Support Group and you should have a detailed knowledge of JCL and be able to demonstrate a proven track record in an IBM operational environment.

### OPERATIONS PROJECT ANALYST up to £10,000

This is an excellent opportunity for an experienced JCL writer who has some project work experience in an operational environment.

### DEPUTY SHIFT CONTROLLER up to £12,000 (inclusive of shift premium)

Ideally you will currently be a successful shift leader or senior operator within an IBM installation. We can give you the opportunity to use this experience in taking responsibility for a part of our four shift system.

Experience of MVS/JES and JCL is essential.

Our remuneration package is first class with a non-contributory pension, free Life Cover, BUPA, Profit Sharing and Share Option schemes, together with generous assistance with moving to Wiltshire.

For an explanatory booklet and application form please call **Marilyn Adams** on **Swindon 0793 45344** (24 hour answering service) or return the coupon to her at **Hambro Life Assurance plc, Allied Hambro Centre, Swindon, Wilts SN1 1EL.**

Please send me your recruitment booklet and application form.

Name ______________________

Address ______________________

CW22/3 (8478)

هكذا منه الأصل

ALLIED HAMBRO FINANCIAL MANAGEMENT

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# SYSTEMS AND PROGRAMMING

**DATAPOINT – UNLIMITED OPPORTUNITIES**
**CITY/BERKS £10-12,500**
My client is a prestigious UK financial services organisation with worldwide links. Due to continued expansion they now require talented analysts/programmers with good Datapoint/Databus experience for several major interesting development projects. Career progression opportunities are unlimited and if you prefer to specialise in a certain area you will be given the opportunity to do so. People with the skills and ambition to work in this fast growing and challenging environment will be rewarded with an excellent package and first class working conditions. MW/3962

**MINI COBOL ESSEX £10,500**
My client, a well-known household name, urgently seeks an "above average" COBOL programmer. They currently utilise 8800 minis and are in the middle of upgrading to 8900s. Burroughs experience would certainly be an asset, however the company invite applications from self-motivated individuals with a solid commercial background and a minimum of 18 months' COBOL experience. The work itself involves interesting development plans and enhancements to existing systems. This company also house IBM hardware and as all vacancies are advertised internally the opportunity to reorain on IBM will be available to you. First class benefits include flexi time, subsidised restaurant and profit share. M/W/4018

**IBM COBOL – CICS TRAINING!**
**LONDON To £13,000**
A host of new projects has created the need to set up a new development team within this Central London based firm. Kit includes IDM 4341, DOS/VSE, VM/CMS with CICS and DL/I. You should have a sound education, a minimum of two years' IBM COBOL, DOS/VSE, and the ability to learn new techniques, extend your analysis skills and get in at the start of planned expansion. Full training can be provided in CICS and DL/I, and benefits include annual bonus, flexi time and travel loans. CW/4404

**NCR ANALYST/PROGRAMMER LONDON/MIDDX BORDERS**
**£11,000**
My client is a national retailing establishment, and is seeking an analyst/programmer with at least two years' NCR COBOL and database experience to join an exciting development project team. The job will involve extensive user liaison and gives every opportunity to develop your analytical and design skills to the full. A full range of benefits and a structured career path are offered to keen, ambitious candidates. AW/4184

**BURROUGHS – LARGE SYSTEMS HERTS c. £10,000**
Based in Central Hertfordshire, this multi-mainframe user is seeking a programmer/analyst to work in a manufacturing/retail environment. If you have a minimum of two years' COBOL on medium to large Burroughs machines and would like to progress a step forward into analysis and user contact, this could be the move for you. Why not call for further details. AW/4418

**PROGRAMMER/ANALYST IBM DEVELOPMENT**
**ESSEX To £10,000**
Due to this company's expansion plans for 1984 a position has been created for an IBM COBOL programmer/analyst to be involved with the development of financial sales and marketing systems. This is an ideal opportunity for someone who wishes to further their technical experience. An IBM DOS/VSE background is essential and CICS experience would be desirable, however, training can be provided. The company offer an excellent range of benefits including flexitime and staff restaurant. GW/2093

**HONEYWELL PROGRAMMERS**
**CITY To £10,000 + mortgage**
This prestigious national financial services organisation is seeking to recruit a number of self-motivated individuals to join their expanding department. The company house Honeywell Level 6 machines supporting an extensive network of TDX terminals. As they are looking towards major development plans, they are seeking programmers at all levels, with a minimum of two years' working knowledge of COBOL and/or Screenwrite. They offer in return a competitive salary, mortgage subsidy, travel allowance, and an exciting and challenging career opportunity. EW/4421

**ICL ME29 PROGRAMMER/ JUNIOR ANALYST**
**MIDDX c.£8,500**
My clients, an internationally known household name, now have openings in their small D.P. department for programmers with 18 months' experience of ICL COBOL and a good commercial background. The company also wish to hear from a well educated professional who wishes to move into analysis at a junior level. You should have some exposure to systems, in a business or commercial environment, and preferably a knowledge of programming. The right candidate will be offered excellent long term career prospects. EW/4420

**IBM SYSTEM 38 – SENIOR MIDDX/BERKS BORDERS £14,000**
This is an outstanding opportunity to join a team of six as an analyst/programmer working on the development of accounting and engineering applications. The company converted to IBM System 38 about 18 months ago and are looking to expand their team. You should have three years' + D.P. experience with at least 12 months' System 38/RPG III, and some analysis and design skills. You will be coming in at senior level, therefore playing a key role in future plans, utilising the latest technology. Please contact me for details. CW/4419

**ANALYST/PROGRAMMER (SENIOR) AND PROGRAMMER**
**HANTS To £13,000**
Two positions available within this dynamic and progressive organisation, fully committed to computerisation. They are developing bespoke software and tailoring packages and forward planning, projects a two year work load. The senior post requires four years' + experience, with at least 12 months' solid RPG III, design and analysis skills, and the ability to respond quickly to user needs. The other post is for a programmer with 18 months+ System 34 or 38 experience, who wishes to move into the user liaison and analysis areas. The company are located close to the motorway and is easily accessible from Hampshire, Berkshire and Surrey. GW/4414

**IBM – ALL AREAS**
**THE PICK OF THE JOBS! £8-14,000**
We have clients throughout London, Essex, Herts, Berks, Surrey, Kent, Middx and Hants looking for talented and ambitious programmers, analysts/programmers and systems people with a minimum of 18 months' COBOL, RPG II/III, PL/1 or ASSEMBLER gained in an IBM environment. If you feel that you are not being adequately rewarded, or would like to enhance your skills with on-line of database training, give us a ring and one of our consultants would be pleased to assist. GO/GEN

**IBM SYSTEM 38**
**WEST END To £11,500**
My client, an international consumer products group, now has openings in their D.P. department for an experienced Programmer and Analyst/Programmer both with an RPG III background. This is an expanding department therefore the candidates appointed can expect career progression as the main emphasis of the positions will be the implementation of new systems. To discuss these positions further please contact me as soon as possible GW/4349

**PL/1 – BERKSHIRE, SURREY**
**LONDON £8-12,000**
Internationally renowned marketing firm on the Middlesex/Berkshire borders requires an analyst/programmer with around three years' IBM PL/1 experience to take a leading role in their team. They utilise DOS/VSE, CICS and DL/1 and you would be developing a range of on-line sales and marketing applications, liaising with users on a regular basis and writing specs. Benefits include annual bonus. I also have positions in London, Surrey, Middlesex and Kent for programmers with 18 months+ PL/1, offering excellent career progression, relocation expenses, etc. Ref: CW/1741

These positions are just a brief selection from our extensive database of jobs in London and the South-East. If you cannot see a position advertised for your particular skills, or are considering relocating or a change of hardware, a quick 'phone call will put you in touch with a consultant specialising in your field. 70% of jobs in this industry are never advertised. Why not let us tell you about some of them? We look forward to hearing from you.

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Sainsbury, the UK's leading food retailer, has an outstanding record of profitability and growth. Our success is based on the quality of our products, our service and most of all – our staff.

In an organisation which each week sells more than 7,000 product lines to 6½ million customers buying 125 million items... systems are vital to our on-going business. Our present configuration comprises IBM 3033 and Atlas 10 mainframes and we have a major commitment to a significant on-line database systems programme covering distributed stock control, purchasing and management information systems.

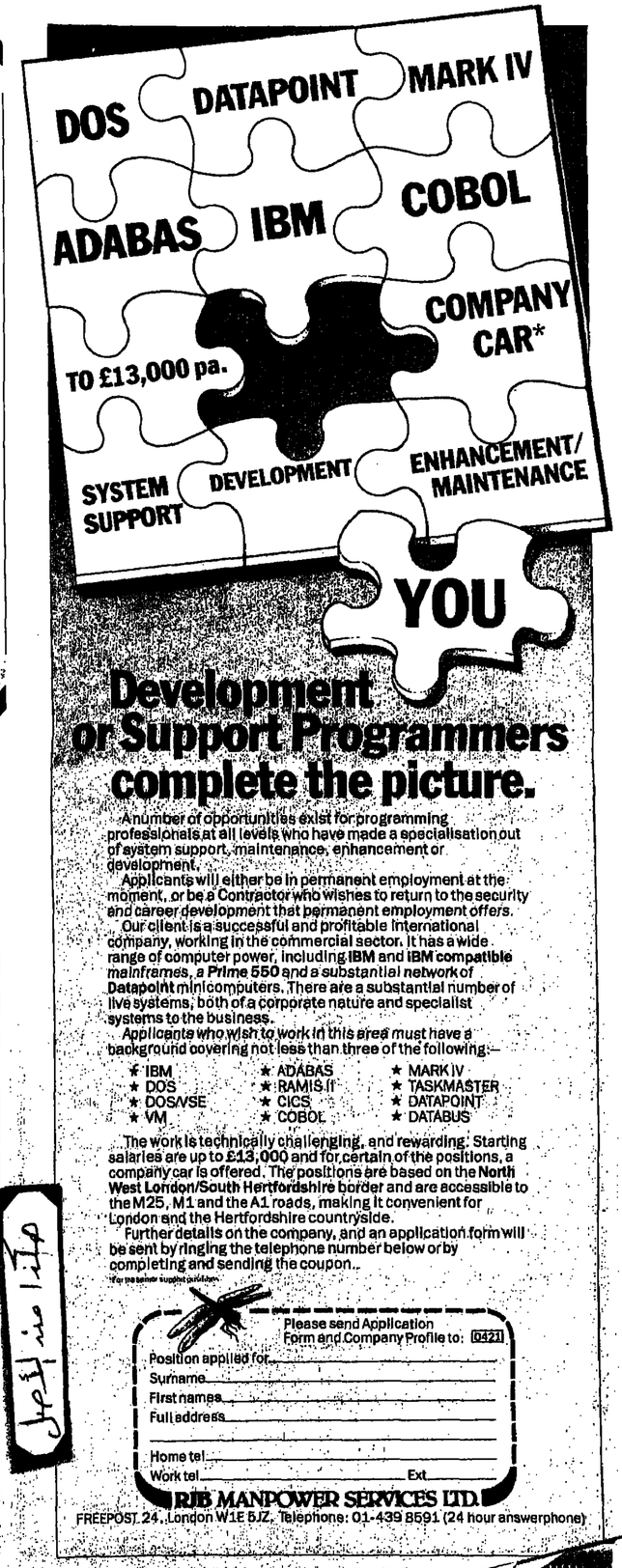
We now seek an additional DP professional to join our database design team and become involved in all aspects of detailed technical design as well as advising on technical issues.

You should have a solid IBM background and at least 2 years' experience in the design and implementation of DL/I under CICS or IMS DC. Experience of performance monitoring and IRC would be an advantage.

Excellent benefits include:
- interest free season ticket loan • subsidised restaurant
- profit share after 2 years • share option scheme after 3 years
- BUPA • relocation assistance, where appropriate

For an informal discussion please telephone Dave Anderson, on 01-921 7323. Alternatively please write with a detailed c.v., or telephone for an application form to: Lorraine Cathersides, J. Sainsbury plc, Wakefield House, Stamford Street, London SE1. Tel: 01-921 6047.

**SAINSBURY'S** (B516)




# Development or Support Programmers complete the picture.

A number of opportunities exist for programming professionals at all levels who have made a specialisation out of system support, maintenance, enhancement or development.

Applicants will either be in permanent employment at the moment, or be a Contractor who wishes to return to the security and career development that permanent employment offers.

Our client is a successful and profitable international company, working in the commercial sector. It has a wide range of computer power, including IBM and IBM compatible mainframes, a Prime 550 and a substantial network of Datapoint minicomputers. There are a substantial number of live systems, both of a corporate nature and specialist systems to the business.

Applicants who wish to work in this area must have a background covering not less than three of the following:–

| | | |
|---|---|---|
| ★ IBM | ★ ADABAS | ★ MARK IV |
| ★ DOS | ★ RAMIS II | ★ TASKMASTER |
| ★ DOS/VSE | ★ CICS | ★ DATAPOINT |
| ★ VM | ★ COBOL | ★ DATABUS |

The work is technically challenging, and rewarding. Starting salaries are up to £13,000 and for certain of the positions, a company car is offered. The positions are based on the North West London/South Hertfordshire border and are accessible to the M25, M1 and the A1 roads, making it convenient for London and the Hertfordshire countryside.

Further details on the company, and an application form will be sent by ringing the telephone number below or by completing and sending the coupon.

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Position applied for
Surname
First names
Full address
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# PAPUA NEW GUINEA

Applications are invited from suitably qualified and motivated persons for this senior management position with the Data Processing Advisory Section. This section provides technical advice to the Government on all areas of Data Processing; advises departments on technology systems appropriate to their needs and plans, and co-ordinates development of EDP.

# MANAGER DATA PROCESSING

**SALARY K22,520 (£17,565 p.a.)**

Qualifications – University Degree, 10 years' data processing experience covering a wide range of hardware and software, to include microcomputers and EDP, plus a consultancy background.

Salaries are payable in Papua New Guinea Kina. The Exchange Rate varies from time to time, but on March 14, 1984, it was £0.78=K1.00.

## BENEFITS

Three-year contract, 24% Gratuity of annual salary. Free married/single accommodation. Air fares to and from Papua New Guinea. Six weeks' annual leave. Generous Education Subsidies.

***Please write or telephone for application forms and further details, quoting Reference Number VIS/PSC/1, to Recruitment Department, Papua New Guinea High Commission, 14 Waterloo Place, London SW1 4AR. Telephone 01-930 0922. Telex 25827 KUNDU.***

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(B475)

*The IBM SYSTEM 34/36/38 Recruitment Specialists*

# RPG II
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### S.E. COAST

My Client (part of a multinational Group) designs and manufactures state-of-the-art electrical and electronic equipment. Continuous investment in the latest design and manufacturing techniques ensures their reputation as world leaders in their field. Employing approximately 550 staff they enjoy a multimillion pound annual turnover.

The SYS/36 newly installed is utilizing a range of computer based control systems in manufacturing, marketing and financial area.

The computer services manager is a newly created position involved in all aspects of design, analysis and programming. The candidate will require a sound understanding of how a company is organised and operated, its procedures and controls. Managerial experience in a manufacturing environment with broad experience in several functions would therefore be desirable.

The responsibilities will include a phased withdrawal of bureau services and a plan for the introduction and purchase of packaged software including MAAPICS. As packages improve and new packages are introduced you will advise and explain the benefits involved. An understanding of micro's and proposing the need to acquire more in this range whilst maintaining a cost effective balance to the SYS/36.

This is a vital role in a friendly and progressive company where skills of communication with users at all levels will be necessary. Flexibility and the ability to view the appointment as being a member of a team incorporating all user departments and their needs is essential.

For further information please call **Richard Milgum** on **01-354 1055** during office hours or **01-958 2553** evenings and weekends.

(B486)

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# Scientific Programmers and Systems Analysts
## Bristol

Opportunities exist for men and women to join us in the following job areas of our expanding high technology operations in Bristol.

### Scientific Programmers

Working in an IBM mainframe environment, you will undertake technical programming in support of a wide variety of projects. This will involve writing programmes, largely in FORTRAN, for batch or interactive use; assisting with programming problems; supporting colour graphics application and gaining knowledge of other programming languages.

A degree or equivalent in Maths, Computing or Engineering is required together with programming experience, preferably FORTRAN.

### Systems Analyst

To liaise with other departments to establish and define system requirements and carry out detailed technical design and specification of systems modules and test systems prior to implementation.

A degree or equivalent in a technical discipline is required together with commercial data processing experience as a programmer or analyst in a manufacturing industry.

Salaries are negotiable and terms and conditions will reflect the level of these appointments. Where appropriate, a relocation package will be available to assist successful candidates in moving to this highly attractive area of the South West.

In the first instance, send your c.v. in confidence, quoting Ref: 240/DH, to D.P. Healy, Recruitment Department, FPC 104, British Aerospace PLC, Dynamics Group, FREEPOST (BS 3666), Bristol BS12 7BR. No stamp required. Full application form on FREEFONE 9918. Alternatively, you can telephone for an application form on FREEFONE 9918. Ext. 1030/778.

BRITISH AEROSPACE DYNAMICS GROUP
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# your appointments register

## Programmers

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| **NCR/IBM/COBOL** | Insurance Banking | to £15K London H. Counties N. Eng. |
| **COBOL/PL1/OS/CICS/IMS** | Commercial | to £13K H Counties · Midlands · Manchester |
| **PROGRAMMERS** DATAPOINT | | to £12K Berks |
| **ICL/COBOL** | Two years' commercial experience | to £12K Notts |
| **DEVELOPMENT PROGRAMMERS** CP/M + DEC | | to £14K Herts |
| **RPG 2/3** | Minimum one and a half years' experience | to £14K Northants/Leicester/London/N.E. |
| **SYSTEMS PROGRAMMERS MVS CICS** | Systems experience | to £17K Middx |
| **BASIC/ASSEMBLER** | Mini/Micro Computers | to £15K London |
| **DATAGENERAL** | Business Basic | to £11K Kent |
| **APPLICATIONS PROGS** | COBOL "C" and Unix | to £14K London |

## Analyst/Progs

| | | |
|---|---|---|
| **RPGIII** | Long contracts | to £NEG. Nationwide |
| **IBM 34/36/4341** | London/Home Counties/Leicester | to £15K |
| **HP3000/280** | Assembler Micro Processor Based Applications | to £14K Middx. |
| **MS/DOS** | "C" Datacomms experience | to £16K Middx. |

## Hardware/Support

| | | |
|---|---|---|
| **TECH. SUPPORT MANAGER** | IBM DOS/VSE CICS IDMS | to £18½K + CAR Kent |
| **SERVICE ENGINEERS** | DEC exp. | to £12K London |
| **SOFTWARE SUPPORT ENGINEER** | FORTRAN essential | to £14K Middlesex |
| **CUSTOMER SUPPORT** | APL Background essential | to £15K Midlands |
| **DEVELOPMENT ENGINEER** | Video Terminal Manufacture | to £14K Middx. |
| **TECHNICAL SUPPORT** | IBM Installations | to £12K + Car Nationwide |

## Systems Analysts

| | | |
|---|---|---|
| **SPERRY 1100/FORTRAN** | DATABASE Techniques | to £14K Herts |
| **CAD/CAM** | Real time · Modelling | to £16K Man/Essex/South West |
| **IBM/BURROUGHS** | Commercial Accountancy | to £15K London/Surrey/Manchester |
| **BASIC plus/PDP** | | to £11K Tunbridge Wells |
| **IBM/ICL** | Commercial Applications | to £14K London/Midlands |
| **ICL 2900** | COBOL | to £11K Dorset |

## Software Engineers

| | | |
|---|---|---|
| **CORAL/PASCAL/MASCOT/C** | Communications | to £15K Glos/H. Counties/Midlands/Blackburn |
| **REALTIME** | Experience in embedded Micro-Processor Systems and M.O.S. Devices | to £15K Berks. |
| **MILITARY SYSTEMS/RADAR** | Coral · Mascot | to £17K Hants/Surrey/Essex/S. West |
| **PDP/VAX/INTEL** | High Level Assemblers | to £16K In Derby/Surrey/London/Kent |
| **FORTRAN 77/ASSEMBLER** | Coral/Mascot/APT/Communications/ Protocols | to £16K Avon |
| **HP3000/INTEL** | CAD/CAM/ATE | to £12K Home Counties |
| **Z80/ASSEMBLER** | Bi-lingual Terminals/Emulation | to £11K Surrey |

## Snr Appointments

| | | |
|---|---|---|
| **INTERNAL SALES ENGINEER** | Micro Development Data products, Logic and Data-com Analysers. | to £12K Middx. |
| **SALES EXECUTIVES** | Mainframe | to £30K Nationwide |
| **CONSULTANTS** | CAD/CAM | to £18K NATIONWIDE |
| **SYSTEMS MANAGER** | Networking Systems and Communications MODES Datapost ARC | to £15K Manchester |
| **SALES EXECUTIVES** | Turnkey Systems | to £20K Nationwide |
| **MICROCOMPUTERS** | Local Area Nets through Distributors and OEM's | to £20K South |
| **SOFTWARE SECTION MANAGER** | Pascal/C/Microprocessor | to £18K Essex/Middlesex |

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# IBM OPPORTUNITIES

**COBOL PROG/ANAL — CITY — c £11,500**
*Variety, opportunity, responsibility and training from a thriving international company* based in the City. Our client seeks a Prog/Analyst to work on a wide range of new development projects with the opportunity to work on a variety of hardware. This is a key role for an ambitious individual who can offer a minimum of TWO YEARS' COBOL preferably gained on IBM hardware.

**COBOL PROG — CITY — £12,000 + MORT**
Are you looking for a challenging position plus early promotion prospects? This leading international bank seeks a confident individual with a minimum of TWO YEARS' IBM COBOL with at least SIX MONTHS' CICS experience. They retain IBM 4300 hardware running under DOS/VSE using COBOL, CICS & DL/1. For an excellent career path phone for further details.

**COBOL PROGS — CITY — £10,000**
CICS TRAINING – Eager to develop new skills? This progressive City-based organisation offers training in CICS and DL/1 to Programmers with a minimum of 18 MONTHS' IBM COBOL. They are embarking on new development projects and can offer excellent future prospects in either Analysis or Systems. If you seek work in a dynamic and flexible company phone now.

**MICRO SUPPORT AN/PROG — CITY — c. £11,500**
Our client has recently set up a MICRO INFORMATION CENTRE utilising IBM PCs and seeks an Analyst/Programmer for its leading role. This is a ground-floor opportunity and offers responsibility for a large development area. Company also retains IBM Mainframes and Minis and can offer VARIED exp. and much TRAINING for its variety of packages. If you have MICRO ASSEMBLER and preferably some exposure to COBOL PLEASE PHONE.

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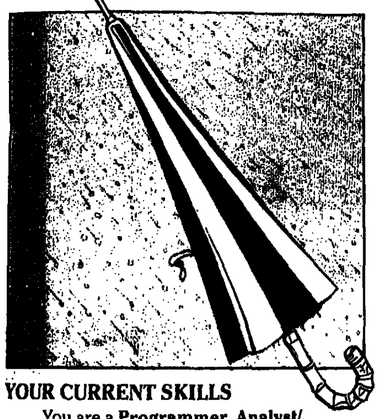
# Are you sure



**YOUR CURRENT SKILLS**

You are a **Programmer, Analyst/ Programmer, Senior Programmer** or **Programming Team Leader.**

You are experienced and proficient in **PL1** or **Assembler,** and used to working with **DL/1.** *You probably also have some working* knowledge of **IMS** and/or **CICS.**

You are good, and working hard, to improve your prospects and advance your career.

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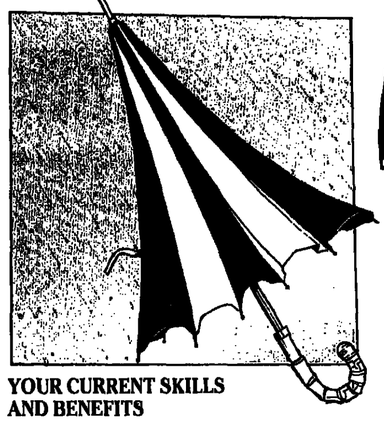

**YOUR CURRENT SKILLS AND BENEFITS**

*You are a* Programmer, Analyst/ Programmer, Senior Programmer or Programming Team Leader.

You are experienced and proficient in PL1 or Assembler, and used to working with DL/1. You probably also have some working knowledge of IMS and/or CICS.

You are good, and working hard, to improve your prospects and advance your career.

You are probably enjoying some career development (although you would prefer more), and some on the job training (although you would occasionally like a professional external course).

You will be paying up to 8% of your salary into a pension and life assurance scheme, have *four weeks holidays, and probably* be paying heavily out of taxed income to commute for two hours every day.

You feel that with what you have to offer, you could do better for yourself.

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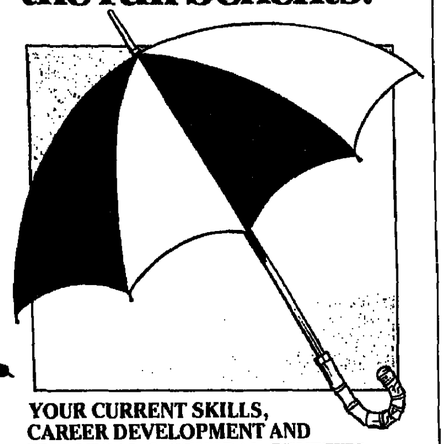

**YOUR CURRENT SKILLS, CAREER DEVELOPMENT AND THE LEGAL & GENERAL BENEFITS.**

You have probably gathered by now that Legal & General are recruiting experienced programming professionals at a number of levels.

The reason for this is the phenomenal success the company is experiencing, particularly in its Life Assurance business.

We are already the country's largest provider of pensions, and the second largest life assurance group. Our assets stand at over £7,000 million, and our growth is built on the very strongest foundations.

At the centre of our Group D.P. function are *a 16 Mb IBM 3033 and a 24 Mb* **Amdahl 580,** running under **MVS** with **IMS, CICS** and **TSO.** They support a substantial national **TP** network, and distributed processing utilises a number of IBM 8100's and IBM p.c.s.

We make extensive use of both internal and external training facilities, which will develop your *skills to the full.*

Our benefits package is quite outstanding, with starting salaries up to **£13,000 pa** (with a review on 1st April this year), an **immediate** and **generous CONCESSIONARY MORTGAGE** facility, NON-CONTRIBUTORY pension, sickness and life assurance schemes, season ticket loans, 65p per day luncheon vouchers, flexitime, at least four weeks holidays and a subsidised restaurant and bar.

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Their current configuration is based around two ICL 2955s presently operating under DME/2; VME/2900 is being installed to support future systems. IDMS, DDS and TPMS will be adopted to manage the forthcoming database and teleprocessing facilities.

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Experience of working in a similar hardware/software environment, with database, data dictionary and online experience at design level. Specialisation in any of these skills would be of great interest.

## Technical Programmers
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## Senior Programmers
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Ability to lead small teams, to train and advise those with lesser experience, and possessing a high degree of expertise in the use of IDMS, DDS, TPMS and COBOL.

## Programmers
### c.£10,000 – c.£12,500 incl. bonus

18 months or more experience using COBOL, preferably though not essentially, in an ICL 2950/60 environment; prior exposure to database and online developments would be useful.

**You should not let the opportunity pass by – contact us now to find out more.**

Please send your Curriculum Vitae or Telephone Barrie Frost for an application form.

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Salaries: up to £11,112 for the senior post [ref OLI/539] and £9,212 for the second post [ref OLI/546].

Please telephone, quoting the appropriate reference number, for application forms: The Personnel Department – Cramlington [0670] 713401 ext 291.

Closing date for applications: 5th April 1984.

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# Opportunities in Computing

Our client is a major public company based in a pleasant part of the Northern Home Counties within 50 miles of London. They are currently seeking the following computer professionals for their expanding data processing department:

**ANALYST PROGRAMMER** — **c. £9,000 + benefits**
Applicants should have at least four years' experience working on commercial systems. DEC experience would be an advantage but is not essential, as is experience of Basic plus and database. The position would lead to the development of systems using fourth generation languages (4GL).

**FORTRAN PROGRAMMER** — **c .£7,500 + benefits**
Applicants should be graduates, having a strong mathematical background, with at least three years' sound Fortran experience to work on a variety engineering-based systems.

**BASIC+ PROGRAMMER** — **c. £7,500 + benefits**
With at least three years' experience working on Basic +, the successful applicant will be required to work on the enhancement of existing systems and become proficient in 4GL.

Please write enclosing full c.v. quoting ref RPS 101 to Sue Namestothy, Royds Personnel Services, Royds House, Mandeville Place, London W1M 6AE.

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A minimum of 2 years' IBM COBOL experience preferably gained in a manufacturing environment with some exposure to database techniques, is sought. CICS or IMS experience will be an advantage, but training in these areas will be considered.

Our wide range of engineering, commercial and manufacturing activities generates a stimulating environment, and the posts carry benefits, including a relocation package, normally associated with a Company engaged in world-wide business.

To obtain details of the positions available fill in the coupon and send to the address below.

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Staff required for thriving and innovative young software house

**SYSTEMS ANALYST/ SALES SUPPORT**

At least five years' computer experience required, preferably on micros. Job entails demonstrations, dealer and end user support, systems design and testing. Age 25+, salary by negotiation (car included). Please write with c.v. to Liz Chisman, Sky Software, 13 New Road, Bromsgrove, Worcs.

**COMPUTER PROGRAMMER**

At least five years' computer experience required, with majority on micros. Job entails writing applications programs for bespoke and package systems in Basic and Assembler. Age 22+, salary to £9,000, depending on experience. Please write with c.v. to Liz Chisman, Sky Software, 13 New Road, Bromsgrove, Worcs. (8581)

### International Microprocessor Based Product Development

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***Computing Degree? 0 to 3 Years Experience?***

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**Full Relocation Assistance to HOLLAND**

***£12,000 — £16,000 p.a.***

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Any experience in Real-Time applications and system development would be useful, and Process Control. Electronic Instrumentation and other similar types of environment experience would obviously be relevant.

Applicants are invited to call **Rex Ashcroft** either directly on **Amsterdam 76 09 47** during working hours (Amsterdam 73 78 22 evenings and weekends), or via our London office on **01-935 0671** to discuss these opportunities in more detail. You may also send a copy of a detailed career history to either office at the addresses below if you prefer. Initial interviews will be held in London during the second week in April.

(8610)

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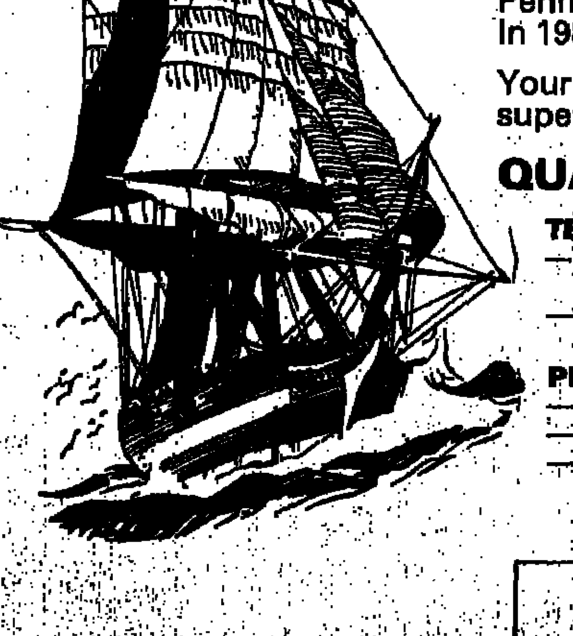

Exciting New Year opportunities are offered by our client, one of America's leading consultancies. Corporate headquarters are located in historic Boston and 14 offices are strategically placed in Pennsylvania, New Hampshire, Conecticut, New York, New Jersey, Indiana, Illinois, Maine & Rhode Island. In 1983, revenue of over $20 million was generated by the 500 employees of our client.

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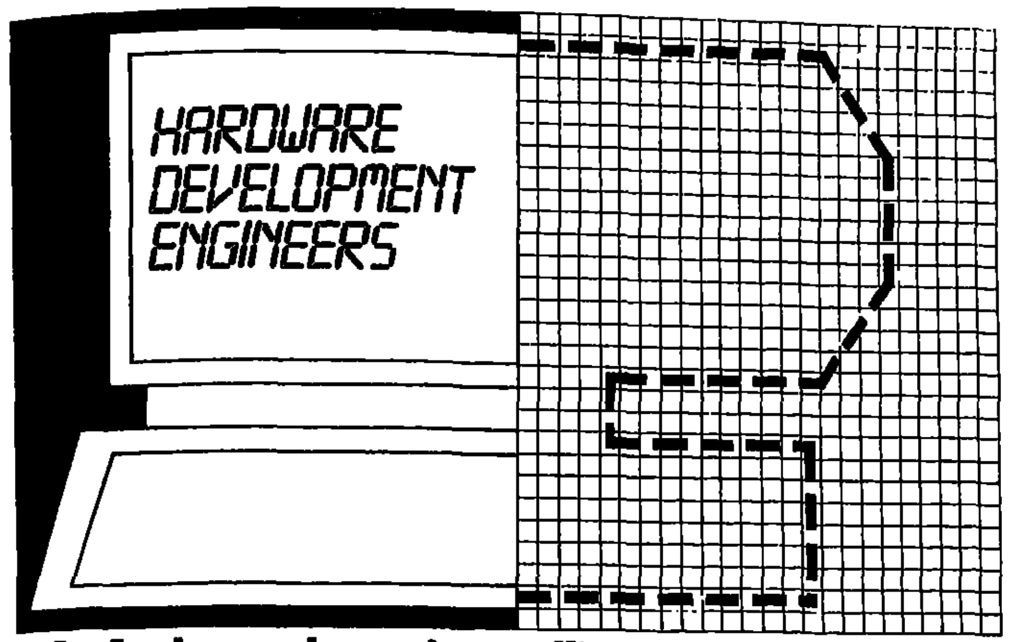


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Our client is developing a new full 32 bit virtual memory microprocessor based product running under the UNIX* operating system including ethernet local area networking.

As a member of a team of systems hardware and software specialists addressing graphics applications, you will be engaged in design and development from concept to production. Experience is therefore vital. Hardware design experience utilising 16 or 32 bit microprocessor elements. Creative, communicative, and as ambitious as the company, *you should also be a graduate in a relevant discipline.*

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The successful candidates are likely to be graduate engineers with a minimum of 2 years sales experience of the computer peripherals market and an understanding of disk drives. They should be able to communicate well at all levels both technically and commercially.

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Personnel and Administration Manager,
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## BOX NUMBERS

Box number replies should be addressed to:

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## Real-Time Analysts & Progs

**Hants/Berks: Salaries to £12K**

**Real-time Analysts and Programmers**, with at least two years' post graduate industrial experience, are urgently sought by a leading software consultancy. The broad range of projects they undertake, ranging from advanced defence systems through to office automation products, guarantee a varied and stimulating working environment. Your software skills should include substantial real-time programming in a block-structured language and an Assembler, combined with a knowledge of the utilities offered by operating systems such as RSX, VMS or UNIX. For those applicants with man-management experience, or potential, rapid promotion is highly likely. **Ref: L/48/A**

## Comms Software

Overseas: Package to £22K

An internationally renowned Systems House and Computer Manufacturer has recently launched a range of Data Communications and Networking Products and is, therefore, seeking additional **Programmers and Designers.** Suitable applicants should hold a numerate *degree and have at least three years relevant* post-university experience with either a Systems and Software House or mini/micro computer manufacturer. In particular, you will be expected to have an in-depth knowledge of Data Communications, Networking Systems (LAN's or WAN's), communications protocols (X25, SDLC/HDLC) or office automation systems. Successful applicants will undergo intensive product training at the Company's *Copenhagen Head-Quarters* and, thereafter, you will be based in USA, Singapore or an EEC country. **Ref: L/5/B**

## Micro Applications Consultants

London and E. Midlands: Salaries to £25K (O.T.E.)

***Profile:*** *Keen Computers Ltd is a leading supplier of UNIX based systems and networks (in* particular OMNINET) and is again poised for a period of planned growth in 1984. The Company has recently established a network of nationwide service and support centres with its Regional Head Quarters based in The City and Nottingham and support outlets in Bristol, Manchester and Slough.

***Personnel:*** Applicants aged 25-35 years should have practical programming, systems analysis or design experience gained in a commercial environment. Your programming background must include fluency in two or more of: PASCAL, CIS COBOL, "C", FORTRAN or Business BASIC. Of particular interest will be those who can combine a sound knowledge and proven experience of applications software in such areas as word processing, database management, operating systems and communications software. Candidates who are familiar with UK accounting practices are also encouraged to apply.

**Job Content:** All positions entail a significant degree of client contact in the form of product demonstration, seminars, in-house and on-site client training, and post-sales support. Well developed inter-personal skills are therefore essential. A willingness to travel within UK as and when necessary is also of paramount importance.

**Rewards:** Earnings will only be limited by your ability since in addition to a very competitive salary, our clients offer an outstanding sales and performance related bonus scheme. All positions carry a generous car allowance or company car.

**Applications:** Please forward a well documented resumé or alternatively telephone one of our Consultants quoting **Ref: LJS/10.**

## Graduate Programmers

London & H. Counties: Salaries to £8.5K

A number of exciting opportunities have arisen in London and the Home Counties for **Programmers** who graduated in 1982 or 1983. You should hold a first or second class honours degree in Computer Science, Mathematics or Electronic Engineering and, of particular interest, will be applicants who additionally hold an MSc. It is essential for all positions that you offer fluency in PASCAL, 'C', ADA, PROLOG, LISP or Assembler. Ideally your project work and/or subsequent experience should include compiler writing, expert systems, firmware development or UNIX. **Ref: L/5/C**

## Systems S/W Development

W. Home Counties: Salaries to £16K

**Software Engineering Professionals** are currently required by the development division of a leading U.S. Systems Supplier. Suitable applicants should hold a first or second class honours degree in Computer Science, Mathematics or Electronic Engineering *supplemented by at least two years software* development experience in a real-time mini-computer or microprocessor environment. Familiarity with distributed processing techniques, communications software, office automation systems or personal computing would be an advantage, but, more importantly, you should be innovative, flexible and have the ability to learn quickly. Working as a member *of a small team, you will be encouraged to* develop your own ideas whilst liaising closely with your team colleagues. **Ref: L/6/B**

## VAX/FORTRAN Progs

London: Salaries to £12K

An International Systems Company specialising in the development and marketing of communications software is seeking additional **Programmers and Designers** for its London Headquarters. Candidates, aged 22-27 years, should hold a numerate degree and have a *minimum of twelve months* FORTRAN programming experience, preferably gained in a PDP-11 or VAX environment. Application areas of interest include Office Automation, Viewdata and Prestel, Data Communications and Distributed Processing. Since these positions entail a high degree of client liaison, you should possess excellent personal communication skills and be prepared to travel both nationally and internationally. **Ref: L/5/E**

(8486)

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**CIRCULATION COMPARISON**

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|---|---|---|
| Computer Weekly | 120,139 | ABC July-Dec '83 |
| Computing | 110,920 | ABC July-Dec '83 |
| Computer News | 100,000 | Publishers claim |
| Datalink | 54,904 | ABC July-Dec '83 |
| Computer Talk | 50,252 | ABC Jan-Dec '83 |

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We would be interested in hearing from candidates who would enjoy the challenge of implementing systems in a mini computer environment, which makes use of the latest office automation and communications products.

The successful candidates will form an important part of a team of d.p. professionals and will be actively encouraged to develop their technical and personal skills. Previous experience within a Cobol environment, particularly working with mini computers would be an asset. The systems analysis post could suit a competent analyst programmer who is seeking his first job in full time analysis.

The d.p. department is located to the North of the City.

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It houses twin IBM 4341/MO2 computers supporting 170 terminals, together with a CMC Reality and IBM PC and Superbrain microcomputers. GUTS (timesharing) and CICS systems are used for most development work. The terminal network over the county is expected to increase substantially over the next two years and mainframe development will make use of productivity aids, packages etc. A research team has been set up to help introduce new small systems. The environment is progressive, challenging and sure to widen your skills.

We are particularly looking for candidates with experience of PL/1, but experience of Cobol programming would be considered. Knowledge of Assembler, UFO or Easytrieve would also be useful. At either level you would work as a member of a team, so good interpersonal skills are considered desirable. This is especially important for the Senior Programmers, who should be capable of supervising junior staff and of writing program specifications.

*Telephone Tony Woodhouse NOW on Norwich (0603) 611122, ext. 5159 for further information or send full details to Development Manager, Norfolk and Norwich Joint Computer Department, County Hall, Norwich, NR1 2DH.*

*Closing date 19th April 1984.*

## READING

Our client Micro Memory Systems is dedicated to the development of high technology peripheral products, and is one of the most successful distributors of computer peripherals and micro related disk subsystem products in Europe. As part of their expansion programme, they have opened a new subsystem production and assembly centre based close to Junction 12 on the M4.

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**£7-£11K + Bonus + Benefits**

The continuing success of our client's products has led to an expansion of their software department. This has created an opportunity for an ambitious and energetic professional to become closely involved in the development of software to integrate our client's range of products to various micro-computers. This will include designing and developing device drivers and diagnostic utilities, and suitable candidates will have experience in one or more of the following:-

- 1–4 years software development on micros.
- Good micro assembler (additional high level *language useful*).
- Understanding of micro operating systems internals.

This exciting and challenging role offers total involvement, the opportunity to extend your skills, and the facility to become familiar with a variety of 8 and 16 bit micros and software (example MS–DOS, PC–DOS, CP/M–86, etc.).

For further information call Keith Taylor at our Reading office or write enclosing full c.v.

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**Ideally, the candidate will already have experience in disk drives and controller technologies, in a similar environment, but consideration will be given to candidates working in a peripheral/systems company in a field service environment.**

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## SOFTWARE ENGINEERS

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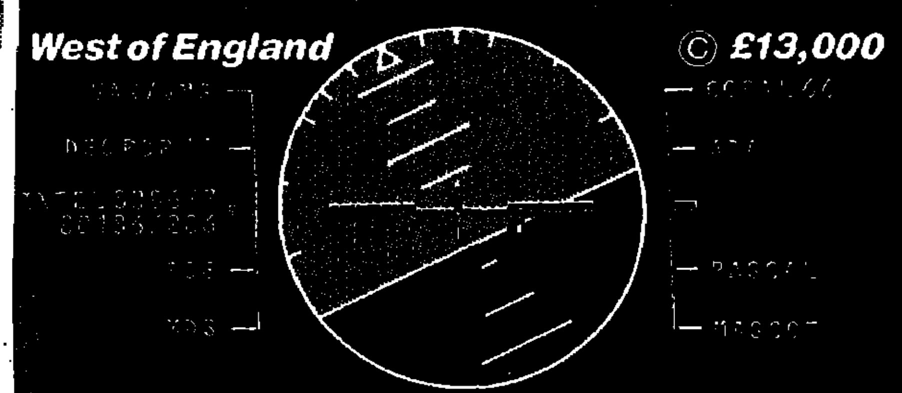

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A small manufacturer of microprocessor-based industrial peripherals, 30 km south of Munich, seeks enterprising person to undertake all aspects of development. Work will include hardware and software design, documentation and customer liaison. A willingness to learn German is essential.

Write or phone: David Cocks, GERCOM GmbH, D-8192 Geretsried, Egerlandstrasse 100, West Germany, tel: 01049-8171-3007.





# Move Into Pre and Post Sales Consultancy
## Large Scale Datacomms/Distributed Data Processing/ Office Automation Projects
### Central London/Birmingham — Circa. £13–17K plus car

If you are currently working for a terminals supplier, a systems house specialising in data communications systems design and implementation, a data communications specialist company, or a large data communications network user organisation we believe we can offer you a chance to significantly extend your technical and personal skills.

We are a recently formed division of a massive UK blue chip company, created specifically to develop our client's larger scale computer projects. One of the first of these is a complex data communications/DDP/office automation network which promises a technical feast for the initiated. Because we are a new division your skills will be a major factor in our success. You will have real influence and be able to quickly increase your personal status as the division grows.

Your activities will be immensely varied, with an emphasis on understanding and interpreting our client's needs and assisting our Senior Sales Executives in recommending appropriate solutions. Subsequently you will be involved in putting forward proposals, presentations, systems design, system implementation and commissioning, training and post sales support.

You should have significant experience of some of the following activities: design, development and implementation of data communications systems and networks; design and implementation of interactive terminal systems; selection/specification of associated items such as:- processors, printers, terminals, modems, multiplexors, interface modules; training of end user personnel. From this you will have gained a good knowledge of communications protocols, circuit standards and operations, front end processor systems and their operation, TP monitors, modems – principles and operation.

Candidates who are free and willing to travel extensively should contact Ian Goldsmid on **01 935 0671** during office hours; or **01 959 7132** evenings and weekends; alternatively submit a comprehensive career resume to our London office.

Technical, Sales & Management Appointments

SCR Specialist Computer Recruitment Ltd

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NORTH: International House, 84 Deansgate, Manchester M3 3EE 061-833 0427
BELGIUM: Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7161/71
HOLLAND: Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-780947



apect computer recruitment limited

**MIDDX. — IBM AN/PROGS — to £13,000**
Work on a *new development project*! Our client, an international organisation based in Middx./W. London, seeks to recruit An/Progs to be involved with the development of a new package. They retain IBM 4300 running under MVS using COBOL CICS and Database, plus minis and micros. All you need is TWO YEARS' IBM COBOL with the desire to succeed.

**CITY — COMMS SUPPORT — £12,000-£14,000**
An exciting opportunity has arisen for a communications biased person to join a major international systems *house. They seek a Programming* or Operations Support background and offer an excellent career utilising the latest DEC kit and systems in the UK and abroad. Their considerable *BENEFITS* package includes a good bonus scheme.

**SURREY — IBM AN/PROGS — £10,000+ BENEFITS**
Exciting opportunities exist within this new major organisation for AN/PROGS with a minimum of 18 MONTHS' IBM COBOL AND/OR ASSEMBLER. Company is currently utilising IBM mainframes running under *DOS/VSE using CICS and DL/1 for* which TRAINING can be given. Career prospects are outstanding and excellent benefit package may include mortgage.

**HOME COUNTIES — ICL ALL LEVELS — £9,000-£14,000**
Several clients based in London and the Home Counties seek experienced ICL staff for their VME installations. PROGRAMMERS with at least ONE YEAR'S commercial COBOL and ANALYSTS with two or more YEARS' formal analysis are required for development work on a range of systems. VME *exposure is desirable although not essential in all cases.*

**MIDDX. — DEC AN/PROGS — £10,000-£12,000**
Two commercial market leaders seek Analyst/Programmers for their expanding D.P. effort. They require two or more years' COBOL or BASIC programming gained in a DEC environment with good user exposure. Basic salaries are augmented by excellent packages to include relocation and possibly car.

**CITY — WANG COBOL — to £14,000**
We have at present been retained by various City-based companies to recruit experienced Programmers with WANG COBOL. These positions offer excellent benefits some of which include subsidised mortgage. If you have a minimum of ONE YEAR'S WANG COBOL phone to find out more about these outstanding opportunities.

**CITY — RSTS/E/BASIC+ — £NEG**
A growing consultancy requires an experienced Analyst Programmer to work on *financial and production control systems for a variety of clients*. They seek an in-depth BASIC+ background with strong analytical skills and a self-motivated approach. The successful candidate can command an excellent salary and future prospects.

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CAREER OPPORTUNITY WITH LEADING BRITISH MICRO MANUFACTURER

## SYSTEMS PROGRAMMERS
## £8·5K TO £13K

We offer a rare opportunity to live in Oxford and work with a team of experienced systems designers, developing our next generation of computer and instrumentation products.

Our current very successful microcomputer family includes a state-of-the-art-network system and new developments will make use of 16 bit processors and gate array technology. Our products are designed to maintain our reputation for high standards of quality and reliability.

The successful applicants will join small teams of systems programmers responsible for all the systems software on our range of microcomputers. This covers firmware, operating systems and utilities for both stand-alone microcomputers and network stations.

Systems Programmers contribute to development projects from concept through to release. *Projects* are normally tackled by small teams providing maximum involvement and opportunites for responsibility at project leader level.

*Previous experience should include a good degree and at least two years' experience of systems software development in industry. Experience of assembler and a high-level systems programming language is highly desirable, as is an understanding of microcomputer hardware.*

**We offer modern office accommodation and a salary range of £8500 to £13000 per annum depending on experience. An attractive range of benefits include; 25 days paid holiday; free BUPA; life and disability insurance; a pension scheme and generous help with your relocation to this area.**

*If you are interested in this vacancy please contact Polly Keane on Oxford (0865) 726136 or write for an application form, quoting ref: SP/CW3.*

RESEARCH MACHINES
MICROCOMPUTER SYSTEMS

RESEARCH MACHINES LTD Mill Street, Oxford OX2 OBW. Tel: (0865) 726136

## Systems Engineer
**c£14K. Woking**

At least 7 or 8 years experience in software is essential (of which at least half would have been in Systems Design and Analysis using computer modelling techniques).

Supported by a Programmer you will take responsibility for the design of a functional computer model of a complex real time signal processing system. **CW1201**

## Software Team Leader
**c£12K. Woking**

You'll probably have 4-6 years experience of PDP11 Series or Ferranti Argus/M700, as you take on the responsibility for the design and production of complex real time applications software (running on a small minicomputer) operating as part of an advanced signal processing system. Your responsibility will extend from the initial design on the VAX11/750 host to its transportation to and commissioning on to the Target system. **CW1202**

## Software Engineer
**c£11K. Woking**

You'll have 2-3 years in Software Design using modern structured programming techniques in Assembler and high level languages. The team that you will join will be carrying out software design to requirement specs, and specifying and producing real time software. **CW1206**

## Senior Programmer
**City of London to £15,000 plus benefits**

To work for an international bank in the city. Applicants must have knowledge of Data Communications (from the systems programming perspective), IBM systems (preferably under DOS/VSE) and COBOL with CICS. A minimum of 7 years relevant experience is anticipated. Knowledge of IBM assembler and banking applications would be desirable. **CW1203**

## Senior Sales Executive
**£ negotiable South.**

Required for city backed microcomputer company based in the south, specialising in Local Area Networks through distributors and OEMS.

Task to increase customer base in UK, Western Europe, Africa and Middle East, to increase turnover by £1m in the first year. Sound technical knowledge of microcomputers and LANS, fluency in French and German and a numerate ability required. Desired age mid thirties, must demonstrate practical sales achievement and sound career path. Package to include significant incentive, as well as company car, health insurance etc. **CW1204**

## Project Managers/Leaders Analysts & Programmers
**£ negotiable Slough**

Autofile is looking for 15 people. Autofile a fast growing DEC based computer software organisation whose capability with the VAX and PDP-11 has been demonstrated on such projects as the ITV's election computing and a large holiday reservation system requires, Project Managers, Project Leaders, Analysts and Programmers familiar with DEC products. Why don't you become part of Autofile's success. **CW1205**

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**Sloangate** The Appointments Register

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**TAX-FREE SAUDI ARABIA**

# COMPUTER HARDWARE and SOFTWARE PERSONNEL

The company is the sole agent in Saudi Arabia for one of the world's leading suppliers of IBM compatible mainframes and peripherals in 4300 to 308X range. It has an immediate need for the following individuals matching the exact requirement, who are:

## HARDWARE ENGINEERS

At least three years' experience of installation and maintenance of IBM or IBM DCM in medium to large systems including CPU and other peripherals is required, although right candidates would be product trained. Individuals with better experience and proven leadership record/quality will be considered for senior engineers positions.

## SYSTEMS SOFTWARE SUPPORT REPRESENTATIVES

Need to have spent six years in IBM System software environment, the last two years in MVS, VM, CMS, DOS/VSE, in medium to large installation, with speciality to support customers in installations, planning, tuning, training, as well as systems software installation and maintenance. Experience in major subsystems, e.g. CICS and VATM will be favoured. Individuals with better experience and proven leadership record/quality will be considered for senior positions.

## SALES REPRESENTATIVES

A minimum three years' proven sales experience of IBM or IBM PCM Mainframe is needed. Software background or Middle East market experience will be definite pluses. Individuals with right experience and background will be considered for sales managers positions.

**Please forward your c.v.s to Fayyaz Kahloon at Fissions Limited, 10 Mackay Road, London, SW4 or phone him at 01-627 4683.**

**Fissions Limited**
Computer Consultants

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## IBM 370 opportunities in Nigeria
## 2 year contracts
## c£32k p.a.+big benefits

*UAC in Lagos, Nigeria, is a member of the Unilever Group with a well established IBM 370 installation under DOS/VS.*
*Rapid company expansion has placed increased and changing demands upon our computer and business systems, so we're re-thinking our entire operation.*
*Which is why we're seeking two well qualified and experienced self-starters for the following opportunities – COBOL, DOS/VS and other operating systems experience is essential, working in a highly demanding environment.*

### Software Manager

*Your main objectives will be to monitor the current operation, strengthen any weaknesses and manage, motivate and train a small team of support programmers. You will also participate in the review of the current hardware facilities and assist in the management and implementation of any developments which result from that review. To meet the demands of the job you should currently be in a management or very senior position within a software team at an IBM installation involved in a wide variety of applications.*

### Systems Analysts/Analysts

*Firstly you will be involved in a review of existing systems to determine any weaknesses and establish any omissions.*
*You would then be responsible for implementing any agreed proposals on how those systems should be further developed to meet new requirements.*
*The training of local support programmers would also come within your orbit of responsibility.*

*These interesting opportunities offer the chance to work in a fascinating part of Africa, earning around 34,000 naira a year, which at current exchange rates means about £32,000 sterling.*
*You'll also receive an end of contract bonus, free air fares, subsidised accommodation, children's education allowances if required and other overseas benefits.*
*So if you're looking for a big opportunity to capitalise on your experience, you should find out more about these positions.*
*Interviews will be held in London.*
*Write with brief career details to:*
*Roger Harvey, UAC International Ltd.,*
*UAC House, P.O. Box 1,*
*Blackfriars Road, London SE1 9UG.*

UAC

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# Data Processing Manager
## Worcester c£13,000 + Car

Our client, Morganite Crucible Limited, is a highly successful subsidiary of a major international group. The company, a world leader in its own specialist field of high-technology products, has the support of a progressive and well established DP function.

Highly advanced commercial and financial DP systems are already in operation and significant development is planned in production and warehousing/distribution areas.

The DP Manager, *who reports to the Financial Director*, is responsible for budgeting, staffing and day to day control of a department with ten experienced computer personnel. Specific responsibilities include:

* Systems development and implementation
* Selection of equipment and software
* Project planning
* Feasibility studies
* Recruitment, training and staff development

The position will suit well qualified systems analysts, project leaders or deputy DPM's in their late twenties or early thirties with several years relevant experience preferably gained in a manufacturing environment. In addition to practical experience, it is essential that candidates have high standards of oral and written expression; proven managerial skills and the ability to play a major role as a member of a Company's management team. A knowledge of large mini computers and micro-processors would be useful but is not essential.

The position offers an excellent opportunity for career progression in a demanding and professional environment. In addition to an attractive salary, benefits will include a 1.6 litre company car, bonus scheme and generous assistance with relocation to an attractive rural area.

Suitably qualified candidates, male or female, should write enclosing full career details and quoting reference MCS/8415 to:

Jerry Wright, Executive Selection Division, P.O. Box 120, Livery House, 169 Edmund Street, BIRMINGHAM B3 2JP Tel: 021-236 6011.

**Morgan** — **Price Waterhouse Associates**

(8512)

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# CHALLENGING OPPORTUNITIES AND HIGH EARNINGS FOR TOP CALIBRE PERSONNEL IN SAUDI ARABIA

# CALL 01-937 6586 NOW

Our clients, a major US corporation are implementing a large integrated system for military logistics/supply planning at a number of locations in Saudi Arabia and have immediate openings.

## Design and Development

**Assistant to Development Manager**
This is a new position which has arisen due to the increased workload on the project. You will provide technical support and assistance to the Development Manager in the areas of implementation, maintenance and supply. Qualified, you must have 10-15 years' software development experience, 5 years' of which should have been at senior level. (Ref: CADM)

**Maintenance Manager**
Reporting to the Development Manager and responsible for a department of 16, you must have a minimum of 12 years' related experience including maintenance software development. RAF software maintenance experience highly desirable. Must have at least 2 years' managing experience in a software development group in a distributed system environment. Qualified with HP 3000 experience highly desirable. (Ref: CMM)

**Technical Support Manager**
Reporting to the Development Manager and responsible for a department of 6, you must have 8-10 years' related experience including at least 5 years' in HP 3000. Image and distributed systems experience also required. (Ref: CTSM)

Salaries for the above positions are negotiable according to qualifications and experience.

**Senior Systems Analysts and Systems Analysts** £20-25,000 p.a.
7-10 years' experience ideally in maintenance systems (pref. military logistics) or supply inventory systems. HP 3000 experience highly desirable. (Ref: CSSA)

**Lead Programmer and Senior Programmer** £16-18,000 p.a.
3-8 years' experience COBOL, and HP 3000 essential. (Ref: CPR)

## Operations and Maintenance

**Applications Programmers** Salary negotiable
Designs, codes and tests in-house developed computer programmes, must have 5 years' experience in the development of related systems using structured COBOL. (Ref: CAP)

**Operators** £13,500 p.a.
A minimum of 3 years' experience (must include HP 3000) plus ideally IBM. (Ref: COP)

Employment will be for a minimum of 1 year. In addition to tax free salaries and a completion contract bonus, excellent benefits include free accommodation, subsistence allowance, generous leave with 3 home paid tickets and free primary medical care.

Please call now to discuss your application. Interviews with our clients will take place week of 9 April

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**WWA Webb Whitley Associates Ltd.**

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## MDBS III
**DATABASE DESIGNERS**
**ANALYSTS**
**PROGRAMMERS**

urgently required by software house.
Knowledge of C or PASCAL, MSDOS or UNIX an advantage.

**GRADUATE PROGRAMMERS**
with theoretical knowledge of Database also invited to apply.

**Salary to £12,000**

Send c.v. to:
E. M. James
(Managing Director)
MEGATRONE COMPUTER SYSTEMS
106 High Street, Bushey
Herts WD2 2DE

(8614)

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## BOX NUMBERS

Box number replies should be addressed to:

Box Number ........

c/o Computer Weekly
Quadrant House
The Quadrant
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## MICRO DEVELOPMENT PROGRAMMER/ANALYST

WANTED BY UNILEVER RESEARCH TO DEVELOP AND SUPPORT THE USE OF 16/32 BIT PERSONAL COMPUTERS

The Job: ★ 1300 scientists require support in microcomputer usage – IBM PC/Rainbow +
★ part of a team of computer specialists who advise on use of the integrated computing facility including off-site facilities.

The Person: ★ Good Honours degree in science
★ Experience in programming and use of microcomputers
★ Knowledge of Pascal or Fortran and CPM/PCDOS operating systems preferred.

The Place: Unilever Research, Colworth Laboratory, 10 miles north of Bedford, is a complex of buildings centred around a fine 18th century manor house in 1,200 acres of park and farmland.

The Reward: Unilever offer excellent terms and conditions, including five weeks' holiday per year and subsidised on-site dining and sports facilities.
The salary will be from £8,500 depending on experience and qualifications.
Applications should be made using a cv or by requesting an application form from: Mr P. Ayris, Personnel Officer, Unilever Research, Colworth Laboratory, Sharnbrook, Bedford MK44 1LQ, Bedford 781781 before 6th April, 1984.

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## COMPUTER ENGINEERS HARDWARE

The following people are required by well-established secure Companies.
Technical Consultant. Reporting to Tech. Director to solve difficult or persistent Customer problems. H/W Design and Operating Sys. knowledge will be helpful. Sal. neg. above £12.5K + car. Location: Slough.
Field Engineers, Test Engineers, Comms Specialists and Instructors. Locations London and Thames Valley. Salaries to £13K + car.

Call David Aswell: 01-994 6477 or write
Datawell Computer Employment Services Ltd
19 Barley Mow Passage, Chiswick, London W4 4PH (8533)

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# Head of Entertainment Software
## Cambridge

This is an outstanding opportunity to join Acornsoft, the software publishing company within the Acorn Computer Group.

Reporting to the Managing Director, the Head of Entertainment Software will take overall responsibility for running and developing the Entertainment Software Group. The group currently has a budget of £500,000 and a staff of six programmers and program testers, producing board games, arcade games, quiz material and hobby related learning programs.

Key responsibilities include managing and controlling the group, evaluating software, project management, quality assurance and the development of new concepts in entertainment software.

Creativity and experience of entertainment software design are the primary requirements, together with a background of developing commercially successful software products for microcomputers. Education to degree level is desirable.

The benefits package, including an excellent salary, will reflect the importance of this position.

(8534)

Write with full career details, quoting CN/III/CW, or telephone:
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## SAUDI ARABIA
# PROGRAMMER/ SYSTEMS PLANNER
**c. £21,500 TAX FREE**

We require a highly qualified and motivated individual to work in our planning unit which has responsibility for the implementation of the management information system for the Jubail Human Resources Development Institute which we operate on behalf of the Saudi Arabian government.

The successful applicant will have five years' experience programming in Basic using CP/M and/or MS-DOS. Assembly language is also required. Additionally, two years' mini/mainframe experience would be an asset as well as experience with micro networking (NCR/Modus).

This is a single status assignment with a one-year renewable agreement. Qualified applicants should forward a full cv to:

Gildemeister Projects, 105 Oxford Road, Reading, Berks RG1 7UD.

(8548)

# COMPUVAC

## SCIENTIFIC AND TECHNICAL

**IBM FORTRAN** **£17,000+**

Major engineering company in North London requires a Senior Analyst with an IBM FORTRAN background in construction engineering for software development work in the oil industry. You will be liaising with structural engineers on design problems and be involved in user support. REF: JM02

**NETWORKS/ COMMUNICATIONS** **TO £14,000++**

International organisation in City has a wide range of vacancies in networking, communications and real-time systems utilising DEC PDP & VAX equipment to manipulate data that supports major banks and other commercial industries. REF: JM03

**VAX OR INTEL PROGRAMMERS TO £20,000 TO PROJECT LEADERS**

London-based software house has projects in Home Counties and Germany for FORTRAN, PASCAL, ASSEMBLER and CORAL 66 Programmers. The company is involved in all levels of software design for space systems. You will be working on a variety of systems including telemetry control and monitoring, satellite simulation and telecontrol systems, etc. From two years' experience in CAD, circuit design, layout and communications experience is ideally required. REF: JM04

**Tel no. evenings: 01-832 6947**

## COMMERCIAL MINI/MICRO

**NCR LONDON £9,000 + BANK PERKS**

Bank requires Programmer with minimum one year's NEAT experience, to help rewrite complete system. REF: JC09

**WANG VS LONDON £8,000-£16,500**

Several clients, including banks, finance companies, software houses, oil companies, etc, have many positions from Programmer to Senior Systems Analyst. REF: JC10

**H.P. LONDON + COUNTIES £8-18,000**

Good COBOL experience on HP3000 ideally with IMAGE VIEW or query required for many positions from Progs to Senior Systems Analyst.
Good perks include relocation expenses and promotion prospects.

**UNIX AND/OR 'C'** **£9,000-£17,000**

Any experience up to Senior Systems Analyst required by various clients, including banks and software houses; many varied applications, various locations throughout the country. REF: JC12

**Tel no. evenings: 01-858 3884**

## DEC COMMERCIAL

**VAX PROGRAMMERS SURREY TO £12,000 & ANALYSTS**

Private airline has opportunities for BASIC Programmers, with PDP or VAX experience, to develop commercial applications on VAX/VMS equipment. Good prospects for career seekers. REF: JH15

**SENIOR COBOL SURREY £10,000-£14,000 PROGRAMMERS TO TRAIN ON VAX**

Leisure/holiday group requires strong COBOL experience on either mini or mainframe for busy team undertaking crucial development work on multi VAX network. Man-management skills plus a desire to make an important contribution to designing realtime database systems are useful attributes. REF: JH16

**ANALYST PROGRAMMERS MIDDX £12,000**

For system Management of VAX/VMS equipment. Either technical background of VMS or commercial VAX experience is sought by established computer manufacturer. REF: JH17

**MUMPS ON DEC PDP11**

6 MONTH CONTRACT – LONDON – ASAP. REF: JH18

**Tel no. evenings: 01-701 5520**

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(8656)



# ENGINEERING ANALYST

## C. London

## To £16K

Our client, recognised as the world-wide authority in Engineering and construction, have identified the need for an ANALYST PROGRAMMER of a very special calibre.

Tasked with development and maintenance of existing systems within a multi discipline engineering environment you will be responsible for the technical quality of systems analysis, programming and documentation of new systems.

To successfully fulfil this task you will bring to bear in this role your expertise in the following:

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★ **Fortran**
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# Exciting new management opportunities with young, expanding software house...

A division of a rapidly expanding computer services organisation, this specialist mini/micro-computer systems house has been established for over seven years, and is now a recognised DG OEM and ICL Trader point. To allow for planned expansion over the next year they have re-organised to provide direct development and support to the vertical markets. As a result they now need to recruit further experienced professionals to strengthen the middle-management team.

## PRODUCT MANAGER to £15,000

Retail/POS Systems

Reporting to the Computer Services Manager you will take total responsibility for the allocation of resources and production scheduling within the retail systems area. Additional duties will include assistance in establishing growth patterns, manning levels and improving in-house standards and procedures. Although both DG and ICL hardware are involved, it is more important for candidates to have managerial ability.

## PROJECT/TEAM LEADERS to £11,500

Retail/Business Systems

You will be expected to produce both systems and programming specifications and lead small teams in their subsequent development. There will be some client contact but most of your responsibilities will revolve around the day-to-day control of the programming teams; ensuring a strict adherence to standards and procedures. A detailed knowledge of a Business BASIC – particularly DG or MAI – is essential.

In both cases salary will be negotiable in the range indicated, according to experience and ability, and will be accompanied by a full range of benefits. Candidates who do not have the required experience but who could contribute at a lower level – and participate in the growth of a young company – should also apply NOW for an early interview.

**KPG**
**01-948 5922**
KPG Computer Support Services Limited
Cobden House, Park Lane, Richmond, Surrey, TW9 2RA

In all cases you should ring David Mason Johns at KPG on 01-948 5922 (24 hour answering service) or on 01-891 0906 (evenings and weekends).

EMPLOY

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If you have in excess of 18 months' realtime systems software experience in high-level block structured languages then you should apply. Our current investment is exemplified by the array of powerful 16 and 32 bit host processors, placing at your fingertips the most comprehensive set of software tools that the professional engineer could wish for.

Our working environment is relaxed yet creative – informal yet professional with the accent on 'delivering the goods'.

Our selection criteria are not hardware and software dependent, more important is a disciplined and structured approach to software engineering on some of the most exacting of realtime applications.

If you feel that you can make a contribution to these exciting new development projects, please telephone our Advising Consultants **Stephen Brown** and **Alan Carnell** on **01 935 0671**, or telephone in the evenings or weekends on **04024 72610** or **05827 2976**. Alternatively submit a full C.V., in confidence to the SCR London office quoting reference MA/1.

(8508)

Technical Sales & Management Appointments
SCR
Specialist Computer Recruitment Ltd

SOUTH: James House, 46 James Street, London W1M 5HS, 01-935 0671/488 0461
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NORTH: International House, 84 Deansgate, Manchester M3 3EE, 061-833 0427
BELGIUM: Avenue Louise 327, Boite 4, 1050 Bruxelles, 010 322-640 7151/71
HOLLAND: Willemsparkweg 92, 1071 H.M. Amsterdam, 010 3120-760947

# IBM Systems Programmers

## (A chance to work with MVS/XA)

### to £15000 plus bonus, plus car scheme

### Redditch, Worcs

Istel, leaders in the UK software industry, are seeking additional, talented IBM software professionals.

The Company's impressive Data Centre in Redditch, a pleasant area of Worcestershire, just South of Birmingham, provides a multitude of software services to Istel's considerable Client base.

Supporting a nationwide network of DEC PDP and VAX minis and the latest in high technology office and industrial automation services, is a large scale IBM/Amdahl configuration comprising three IBM 3083's (24mb each), a 3033 (16mb), a 3033AP (16mb), a 4341 (8mb), four 4331s and a 24mb Amdahl 5850/60.

This impressive array of hardware makes use of various permutations of MVS/SP 1.3, JES2, VM/SP2, ACF/VTAM v.2, DOS/VSE3, IMS 1.2 [DB/DC], CICS 1.5 (under both DOS and MVS), VCNA, MSS and RSCS, together with a full range of application languages and plans to implement MVS/XA later this year.

Istel is able to offer enormous scope to skilled IBM Systems Programmers, with a good knowledge of MVS or CICS/VS, who have a desire to take on responsible positions within this progressive Company, where they will be actively encouraged, and assisted to broaden their experience through further training in some of the areas listed above.

At the more senior level, an opportunity exists for a Senior MVS Systems Programmer to take up a Team Leadership position, giving involvement in man management, technical planning and the provision of specialist advice to Senior Management on future software policy.

For Systems Programmers who are keen to build a satisfying and rewarding career, Istel offers considerable resources and unlimited career opportunities.

In addition, an attractive benefits package is provided which includes a company car scheme, 25 days holiday (plus statutory days), a bonus scheme, and full assistance with relocation expenses.

To find out more about these excellent career opportunities, contact Istel's Recruitment Adviser **Ian Payne** on **021-236 3781** or send him a brief Career Resume at the SCR Birmingham office.

ISTEL

*Technical Sales & Management Appointments*

**SCR**

**Specialist Computer Recruitment Ltd**

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NORTH: International House, 84 Deansgate, Manchester M3 3EF, 061-833 0427
BELGIUM: Avenue Louise 327, Boite 4, 1050 Bruxelles, 010 322-640 7151/71
HOLLAND: Willemsparkweg 92, 1071 HM Amsterdam, 010 3120-760947

# SENIOR SYSTEMS DESIGNER

**Greater Manchester** — **c. £12,000+ Car + Benefits**

This company is a substantial manufacturing concern located in Greater Manchester and is a subsidiary of a major international British group with a turnover in excess of half a billion pounds.

An immediate priority is to rationalise the company's existing computer systems in accordance with corporate strategy which necessitates the recruitment of a senior systems designer. This position will report directly to London and will have the responsibility for the development, integration and implementation of the new DEC based systems covering all aspects of stock, production and financial management control.

The requirement is for candidates aged 25-35, preferably educated to degree level, with 2-3 years minimum involvement with PDP or VAX in an analyst programming role where a sound applications background both commercial and manufacturing, has been gained.

Ideally the successful candidate will have thorough knowledge of database and program generation techniques and more importantly the ability to lead this project from initiation onwards.

A strong personality, tenacity and drive, with the necessary inter-personal skills to relate at all levels, are a pre-requisite to the success of the individual.

The benefits of joining this large and prestigious group will include a negotiable salary, a company car of your choice within pre-defined limits and the real potential to become an important member of the management team in this progressive D.P. environment.

To apply for this challenging opportunity please write with full career details, or better still, telephone **Angela Taylor** for an immediate confidential discussion on **061-833 0846** during business hours. Evenings and weekends until 9.00 pm telephone: **061-865 5754.**

**INTERFACE**

**RECRUITMENT & SELECTION CONSULTANTS LTD**

No. 1 Central Street, Manchester M2 5WR. Telephone: 061-833 0846 (8811)

# REAL TIME SOFTWARE

## UP TO £18K + BENEFITS

## STAINES BASED

We are the Technical Division of an expanding systems consultancy and seek software professionals to lead a further penetration of our existing and new market sections.

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| Defence Systems | Advanced Communications |
| Process/Industrial | Cable TV |
| Banking | High Integrity Systems |

Senior staff must be self-reliant, consultancy orientated and be capable of high levels of interaction with the sales team to develop new business.

We also welcome applications from Systems and Software Engineers with a minimum of three years' relevant industrial experience:–

PDP/VAX, GEC 4000, FERRANTI, INTEL, ZYLOG, MOTOROLA, Assembler, Coral 'C', ADA, Pascal, PLM

Mini and Micro experience not covered above may still be relevant.

All candidates must be mobile, committed and willing to work at client sites within commuting distance of Staines. Some opportunities for work also exist on the Hampshire coast. Whilst the candidates should preferably live in the A3/M3/M4/M25 belt, relocation packages will be considered at all levels.

Benefits include competitive salary, free PPP, Life Assurance and Pension Scheme, Training Programs and the opportunity to grow with a young and rapidly expanding company.

**Phone Geoff Dongworth on Staines (0784) 63911 or Barrie Kemble on Staines (0784) 56601.**

**Alternatively phone Geoff Dongworth at home on Hackwood (025879) 8307 or write to him at Cord Designs Limited, Cord House, The Causeway, Staines, Middlesex TW18 3AX.**

(8044)

Cord Designs Limited

ZEUS HERMES DIVISION



# Systems Analyst & Analyst Programmer South Yorkshire To £12,000+benefits

We are the London and Scandinavian Metallurgical Company, a member of the Metallurg Group, and a leading producer of metals, alloys and chemicals worldwide. At our site in South Yorkshire we manufacture an expanding range of products serving the needs of the Aluminium, Steel and Superalloy industries. The growing sophistication of our operations requires a corresponding growth in our Computing Resource.

Ours is a small but growing department utilising an **IBM 4331/2** (soon to be upgraded to an **IBM 4361**) operating under **DOS/VSE** with **CICS, DL1** and **UFO.** We work with a diversity of users on business and computer solutions to increasingly challenging problems. Future systems development will cover the full spectrum of the Company's business requirements in the Financial, Commercial and Production areas.

***Growth is such that we have two posts to fill.***

We require a **Systems Analyst** who will have a major role in the design and implementation of enhanced business systems. Our informal but demanding management structure means that the successful candidate will have a unique opportunity to directly influence the success of computing applications within the Company. Energy, resourcefulness and credibility are what we need, combined with the motivational skills that are part and parcel of the leadership role, especially when dealing with client users.

We also need an additional **Analyst Programmer** who will work closely with the Systems Analyst, but who will be self confident and flexible enough to work independently on projects. Ideal applicants will have experience of on-line systems development in an IBM mainframe environment, but just as important is the eagerness and spontaneity to react to client needs.

**Our advising Consultant is Brian Mitchell. Contact him on 061-491 1666 (work) or 061-485 7798 (evenings and weekends) to learn more about the jobs and the Company.**

**VLI Computer People North**

01-836 8411 Computer People London, VLI House, 68-69 St Martin's Lane, London WC2N 4JS · 01-680 4033 Computer People South, 27 George Street, Croydon CR0 1LD · 021-643 8501 Computer People Midlands, Alpha Tower, Birmingham B1 1TT · 061-491 1666 Computer People North, Sovereign House, Sovereign Park, Cheadle, Cheshire SK8 2EA · 01-836 8411 Computer People International, VLI House, 68-69 St Martin's Lane, London WC2N 4JS · 01-836 8411 CoOperators, VLI House, 68-69 St Martin's Lane, London WC2N 4JS · 07[illegible] Computer People, Alpha Tower, Birmingham B1 1TT · also offices in New York and Los Angeles

**The Market Leaders**

# NETWORK CONTROLLERS

## TO £12,000+SUPERB BENEFITS

*You've probably read no end of recruitment advertisements referring vaguely to 'rapidly expanding' networks, but when the Prudential makes such a claim you can be in no doubt of its substance.*

As the UK's largest institutional investor, active in almost every financial market throughout the world, our DP facilities are of major importance. We operate an expanding countrywide network, consisting of distributed IBM 8100's and around 700 remotely or locally attached terminals.

You'll certainly be facing a stimulating new challenge if you're one of the experienced Network Controllers we're seeking to help plan and implement the operational control functions and the hardware and software changes required by new installations. Using a variety of sophisticated monitoring tools you'll be expected to analyse problems and plan for them. In short, a big system and a lot of busy users will be dependent on you for continuity.

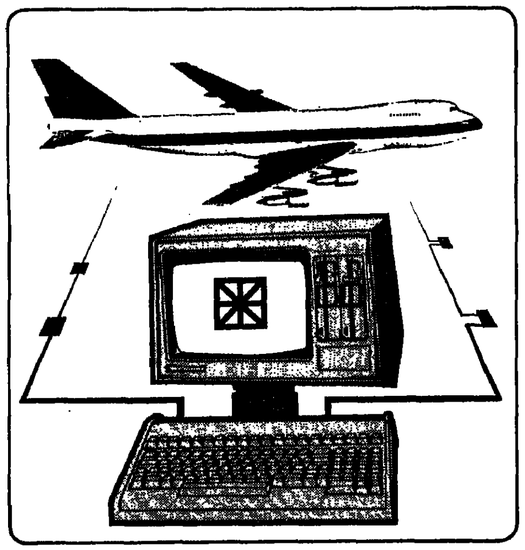
Clearly we're looking for experience in all aspects of controlling the physical and operational layout of a substantial installation and ideally familiarity with a large IBM 8100 distributed network.

You should be familiar with MVS, ACF/VTAM preferably using NCCF/NPDA, and have a good working knowledge of TSO. Formal training will be provided in problem determination and the use of software tools. It need hardly be said that an ability to keep abreast of new developments, and communicate with users on their own terms, is essential.

It's true that our specifications for this appointment are precise, but they have to be. Nevertheless, the man or woman who can match them can look forward to the prospects of a career in a Company renowned for its concern for its staff. In the longer term we can offer opportunities of moving into systems programming or technical support.

Your remuneration package will be enhanced by benefits that include: non-contributory pension, low cost mortgage, subsidised restaurant, generous holidays and active sports and social facilities. To find out more and perhaps arrange a meeting, contact: Ken Pomeroy, Personnel Executive, Prudential Assurance Co. Ltd., 142 Holborn Bars, London EC1N 2NH. Tel: 01-405 9222 x 2568.

Christian Rovsing A/S



# Communications Software Designers

for

## Advanced Data Networks Development in the U.K., Denmark or the Netherlands

*Christian Rovsing A/S is a large European manufacturer of state-of-the-art datacommunications networks whose products have excited considerable interest in Europe and North America, particularly amongst international airlines.*

The company is now able to offer software engineers large turnkey development projects in the fields of

- ★ Network Protocols (including latest ISO standards)
- ★ Terminals and Hosts Protocols
- ★ Electronic Mail
- ★ *High level Protocols* (file to file transfer)
- ★ Specialized airline protocols
- ★ Network Management

**Candidates** should be software engineers with project experience in software development in datacommunications or real time environment or have programming skills in **PASCAL**
**C**
**ASSEMBLY** languages

**For further information please contact Brian Harris at O.C.C. on 0270 627206 daytime or 0270 629454 evenings or weekends. Alternatively contact Steve Cook of Christian Rovsing Systems on 0734 869010 or write to him at Gloucester House, 478a Basingstoke Road, Reading.**

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Specialists since 1971 in UK and International computer & technical appointments

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# ANALYST/ PROGRAMMERS

***Salary C£9,000-£11,000+***

Part of a multi-million pound Group, we are an acknowledged leader in our field and, over many years, have enjoyed an enviable reputation for the quality of our product range.

***IBM System 38***

Based in Nottingham with its inexpensive housing, we have all the advantages of big City life combined with our close proximity to beautiful countryside. The City's cultural and sporting heritage is renowned. Road, rail and air communications with the rest of the Country are excellent.

***RPG III/COBOL***

The Group is totally committed to Data Processing and our IBM System 38 is central to our business activities. We are currently able to offer exceptional opportunities to two System 38 professionals. Successful applicants will require a thorough understanding of RPG III, although experienced IBM COBOL Programmers with GSD exposure and the required levels of technical ability and business awareness will be given formal training in RPG III.

***European Visits***

This is a first class chance to become an integral member of a small Data Processing team actively involved in projects from initial user contact to systems specification and design through to programming and implementation. Our standards are high, but we are quick to recognise potential and prospects within the Group are second to none.

***Nottingham***

The comprehensive remuneration package will include 20 days annual leave, subsidised meals, generous pension and life assurance cover. We will also provide assistance with relocation where appropriate.

For an immediate interview, please contact **Jim Mitchell** on **021 236 3781** (24 hour answering service) or at home on **021 427 2291** (evenings and weekends until 9 p.m.).

Technical, Sales & Management Appointments

(8509)

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Specialist Computer Recruitment Ltd

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Avenue Louise 327, Boite 4, 1050 Bruxelles
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# Contractors – What Will It Be?

## £____

No – we are not aiming for a mass rates explosion but our clients are in need of freelance programming and analytical support and the remuneration is very attractive.

Naturally, we would be more than interested to hear from any contractor who is now or shortly to be available but in particular our requirements are as follows:

Programmers with PL/1, IMS DB/DC and JSP experience
+
Programmers with NCR mini/mainframe, IMOS/IRX/VRX and COBOL experience
+
Programmers with Univac OS1100, DMS, TIP and COBOL experience
+
Analysts and analyst/programmers with banking/financial systems experience, preferably gained in an IBM mainframe environment.

Our clients are predominantly large organisations in the banking and insurance sectors who have extensive development plans and who offer excellent working conditions.

***Please send your CV or telephone Barrie Frost***

ACR
*Alimand Computer Resources Ltd*
15/17 City Road, London EC1Y 1AA.
Telephone: 01 920 0801 (24 hr)

DoE Lic. No. SE 6583

# DEC ANALYST PROGRAMMER

## CITY BASED SHIPPING COMPANY

## To £12·5K

If you're feeling restricted in your present environment, take a good look at what our client, **Ellerman City Liners**, has to offer. One of the shipping industry's most respected names, they have a complex operation to support, one which will challenge and extend your skills in every way.

As an experienced Analyst Programmer, you will join a highly professional team developing systems on DEC PDP-11's running under DSM-11 (Mumps). You will be responsible for all accounting systems, liaising closely with the users to define and satisfy their needs. Your responsibilities will cover the full scope of the analysis, design, programming and implementation of systems, calling on the aid of external consultants whenever appropriate.

To fulfil this role, a minimum of three years DEC programming experience is required, ideally including Mumps, but full training will be given to Basic/Basic+ programmers. Coupled with this, analysis experience, good communication skills and the ability to control projects from conception to completion, with a minimum of supervision, is essential.

ELLERMAN

So, if you are talented, ambitious and enjoy responsibility, set your sights on this career opportunity by calling **Jane Emmanuel on 01-734 9723 daytime or 01-771 1000 evenings and weekends.**

CTR
Computer Technology Recruitment Ltd.
Triumph House, 189 Regent Street, London W1R 7WB.

# TECHNICAL SUPPORT

## C. £12,000

**Update Computers, a young and expanding systems house, is looking for a capable and experienced person to be responsible for providing hardware support and to help in the further development of its systems.**

**Applicants should be experienced in maintaining microcomputers, hard disks and other peripheral equipment down to board level. Experience with local area networks would be an advantage.**

**A successful person could look forward to a larger role within the company.**

**Present systems are based upon the IBM PC.**

**Benefits include 5 weeks' annual leave, a non contributory pension scheme and a private health scheme covering the applicant's family.**

**Central London location.**

**Contact: Amanda Naylor**
**Update Computers Limited**
**33-34 Alfred Place**
**London WC1E 7DP**
**Tel: 01-637 4544**

**Enhancing Patient Care**

# DATABASE OPPORTUNITIES

## Central London to £13,000

A major U.K. Finance House based near Covent Garden is currently undertaking several significant projects using the latest Database development techniques. To ensure that these are successful, they are now looking for an able D.P. professional who wishes to develop a career in database design and support.

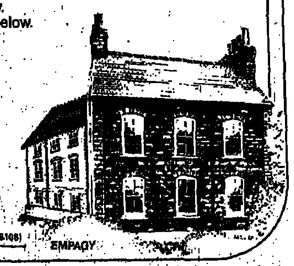
You will be working in a small Data Administration group that supports development project teams, providing expertise on Data Analysis and Database Design and subsequently performance monitoring and tuning. The main database software is IMS/DB with CICS under MVS.

Probably in your mid 20's you will have had 2/3 years experience in either a *database support group* or in programming with DL/1 based applications. Salary is negotiable according to experience and will be accompanied by a generous benefits package which includes Non Contributory Pension, Group BUPA scheme, subsidised restaurant, and after a qualifying period season ticket, loan and mortgage facilities.

Call David Mason Johns TODAY on 01-948 5922 (24-hour answering service) or 01-891 0906 (evenings and weekends) for an interview. Alternatively write to him at the address below. Please quote Ref. 8231/CW.

KPG
**01-948 5922**
KPG Computer Support Services Limited
Cobden House, Park Lane,
Richmond, Surrey, TW9 2RA

(8108)



EMPACT

# ENGINEERING OPPORTUNITIES

## Northants

Our Client, market leaders in the provision of turnkey systems to interactive graphic and CAD applications; have seen a marked growth in their Client base and are now able to offer two unique career opportunities.

As sole UK distributors of leading interactive systems used across a diverse Client base in industry, commerce and public utility Organisations, the engineering facility is a vital factor in their success. Utilising the latest systems innovations which include VAX, 11/23, H.P. and M6800 technology, and with a planned development policy coupled to continuous evaluation of market and product availability, they fully intend to sustain their established reputation for technical excellence.

To support this, they now seek to appoint two key people into critical positions, in order to further improve the provision of a complete and efficient engineering facility servicing installations involving critical production areas.

### Service Manager

**c £15,000 + incentives** **2 Litre Car**

Your task will be to further develop and implement a Service Organisation on a system basis, to support users where down time is critical.

Able to demonstrate a solid technical career encompassing both hardware and software experience, you will lead from the front a competent engineering staff.

Experience in **graphic/CAD** facilities would be advantageous, but more critical is your ability to implement effective Management controls and supply technical and motivational leadership to your staff.

Providing support services from centre, phone support will play a major part, though you should be prepared to take on site visits personally if required.

### Senior Service Engineer

**c £13,000** **Plus Car**

Providing Clients with a high level of service efficiency, demands technical competence and professional qualities that will be rewarded by excellent benefits and a highly rewarding career.

Working at both **total system** and **component level** demands experience on current engineering technology encompassing CPU, disk, tape, printer and plotter exposure.

With a diverse application and Client base, the inherent variety and challenge is unique. Coupled with product development, you are assured of staying ahead in technological exposure.

In such an environment, personal attributes are weighed as critically as technical competence, giving indication of the high standards maintained by our Client.

To apply, candidates should possess a minimum education standard of HND (preferably a Degree) and be able to demonstrate a career to date that proves technical competence and the ability to assimilate new skills. By contributing to the growth of the Company, you can be assured of personal benefit and excellent career opportunities. Full induction and product training, together with generous incentives and benefits, including pension, private health plan and full expenses, indicate the environment. Full relocation assistance is available where necessary.

Candidates should contact the Advising Consultant, **Brian Harris,** on **021 236 3781** (24 hour answering service) or send current résumés to the **Birmingham** address shown below as soon as possible.

Technical Sales & Management Appointments

**SCR** Specialist Computer Recruitment Ltd

**SOUTH** James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461

**MIDLANDS & INTERNATIONAL** 35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781

**NORTH** International House, 84 Deansgate, Manchester M3 3EE 061-833 0427

**BELGIUM** Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7151/71

**HOLLAND** Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947



We are a company who are the leaders in our particular field with regional offices and service-centres located throughout Britain. Our rapid expansion has created the need for a comprehensive MIS management programme.

The immediate aim is to install a new IBM System 38 in our headquarters in ESSEX, and then provide a networked link, using the latest IBM software, to our sites throughout the U.K.

In order for us to achieve our aim, we require a SENIOR ANALYST PROGRAMMER who has the technical ability and personality to help build a new department.

We think the ideal candidate should have considerable IBM GSD experience and have a desire to work in a networked environment. He or she will be heavily involved in the initial systems and programming design. Subsequent phases of the project will provide the opportunity for travel between user sites. Successful candidates can expect a competitive salary and the benefits associated with a major employer.

**For further information and an immediate interview contact our advertising consultant SIMON KONING at**

# Senior Analyst Programmer

## c £12,000

**Train on System 38**
**New installation**
**System Development**
**Key Appointment**
**Rural Essex (London 40 mins)**
**Car allowance**

TCR **Targa Computer Recruitment**

19 Ropemaker Street London EC2Y 9AS Telephone 01-588 9871 Telex: 25851
Monaco House Bristol Street Birmingham B5 7AS Telephone 021-622 2045 Telex: 334237

(8451)

# THE PROGRAMMING STORY BEHIND THE FRONT PAGE NEWS

The news is all from Morgan-Grampian plc., a major publishing house responsible for 50 important titles, many of them required reading for people concerned with the advances of high technology in business and industry.

With the installation of a large new IBM system 38 configuration at our Head Office in Woolwich by leased line to an IBM 3083 connected at Croydon, we're now ready to take on the exceptionally bright, people-orientated Programmers who will write the synopsis for our future growth — in RPG and COBOL — and do much more besides. There will be opportunities for writing systems using micros, minicomputers and mainframe in a multi site environment.

*IBM 38 experience is not a requirement* — we can provide all the training you'll need to use our advanced equipment to develop — then expand — a complete range of software systems. Everything to support exciting developments.

What we want from you is a minimum of 2-3 years' good programming experience and ability to liaise well with people in every area of our business from editorial chairs to finance and media sales.

Later, it could be possible for you to move out into these departments in a key interface role. So you'll need to be the kind of communicator who can bring about a clear understanding of computer systems amongst non-computing people.

If that's the sort of challenge you're equipped to take on, you can expect a starting salary up to £10K, a superb range of benefits and a lively and companionable environment — our staff club amenities include a restaurant and bar. We're also conveniently located close to Woolwich BR station and an excellent shopping centre.

Now for your programming story — everything you've done up to date. Send it to: Personnel Officer, Morgan-Grampian plc., 30 Calderwood Street, London, SE18 6QH. Tel: 01-855 7777.

MG

(8330)

# LANGTON

*Langton Electronic Publishing Systems Limited* is an established but fast expanding systems house specialising in information management.

As a stable and profitable organisation they cover areas such as text and graphics, demand printing, viewdata, on-line retrieval systems, optical and video discs and computer assisted retrieval and delivery systems.

### TECHNICAL SUPPORT ANALYST

**UP TO £14,000**

As part of their expansion plan they now require a technical support analyst.

You will be involved in the installation and support of electronic publishing software products, including trouble-shooting on customer sites.

The position will require some travelling to Europe and potentially North America.

Ideally your background will include eighteen months plus experience in a development or support environment with exposure to IBM VM.

**EXCELLENT BENEFITS PACKAGE**

* Bonus Scheme
* Interest Free Season Ticket Loan
* Pension Scheme
* Flexitime

**For an informal discussion regarding this opportunity please telephone Miles Richards on 01-938 1804 (24 hours) or 01-847 2385 (7pm - 9pm).**

IPP Information Processing People
Specialist Recruitment Consultants
20 Kensington Church Street, London W8 4EP
Telephone 01-938 1804 Telex 22861

*The IBM SYSTEM34/36/38 Recruitment Specialists*

# RPG II & RPG III

for

## Programmers, Analyst Programmers

on

**Banking, Insurance, Commercial, Manufacturing Applications**

**£7,000 — + Benefits to — £18,000**

**For all areas**

London (City, West End, North, East, South, West) Middx.

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| Herts | Sussex | Wilts | Cambs |
| Hants | Essex | Norfolk | Wales |
| Berks | Kent | Devon | Devon |
| Bucks | Oxon | Glouc s | Lancs |

**Please call Richard Milsum on 01-354 1055 during office hours or on 01-958 2553 during evenings and weekends. All response will be strictly confidential.**
**All vacancies are permanent subject to availability.**

(8426)

**MARCH COMPUTER RECRUITMENT LTD** 1 NOEL ROAD, LONDON N1 8HQ 01-354 1055

### FIELD SERVICE ENGINEER

**c£14,500 + BUPA + Car**

Ports Systems Ltd, the UK subsidiary of a US Corporation, supplying telephone test and connecting systems to European Telephony Administrations, are seeking an experienced Field Service Technician. Familiarity with DEC Systems is essential as is a working knowledge of telephony. Candidate should be responsible, flexible and determined in their attitude and able to work away from home for long periods without supervision.

A salary of £14,500, car and BUPA will be provided.

Please send brief personal and career details to Philip Moore, Ports Systems Ltd, 1st Floor, The Parade, Frimley, Surrey GU16 5HY.

(8503)

**BOX NUMBERS**

Box number replies should be addressed to:

Box Number .....

c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS

# Staveley Computing
## WORCESTER

### Programming Supervisor *to £11.5K*

**DEC VMS RSTS BASIC+II COBOL DIBOL**

*For this senior position you will require a minimum of 4 to 5 years experience as programmer and analyst/programmer in commercial systems development, maintenance and customer support. You will direct and control a small team of experienced people whilst maintaining close personal contacts with customers from user department to managing director level. No further major development using DIBOL will take place, although a good knowledge of DIBOL is essential. The only other minimum requirement is RSTS and Basic or COBOL. For future projects VAX/VMS experience would be very desirable.*

### Sales Executive *£17K OE + Car*

**MAJOR PRODUCTION CONTROL SYSTEM**

*This is a newly created appointment for an experienced person with a proven sales track-record, to sell a major new production control system. Applicants will ideally be in the age range 25 to 35 and have a sales background in applications software or turnkey systems. A knowledge of manufacturing and/or experience with selling manufacturing packages would be ideal.*

***Staveley Computing is a fast developing and leading Software House with long established customers, and a rapidly expanding new-customer base. The Company provides a range of major commercial and technical packages, and bespoke systems development. Two opportunities exist for people to join this Company where merit is recognised and rewarded, and good careers made.***

*For further information regarding either of these positions, telephone Digby Dyke on 0905 61 1512 office hours, or 06845 2210 evenings and weekends, or write to him at the address below.*

Computer Personnel & Executive Development Associates Limited, Old Bank House, Bank Street, Worcester, WR1 2EW.

# SUPPORT PROGRAMMER/ANALYST

**Salary Range £8,500 – £11,550 p.a. + Benefits** **Beds**

- ★ *International Projects*
- ★ *Career Position*
- ★ *PC Involvement*
- ★ *Blue Chip Organisation*

Our Group, with an unrivalled reputation for excellence across a diverse range of high-tech products has successfully established its Central Support Group for the European Sales operation.

Now, due to promotion, we are able to offer a position of PROGRAMMER/ANALYST to provide a full range of services to our plants throughout Western Europe. Based in our prestigious complex in Bedfordshire, you will travel when required, to assist both users and sales staff on the effective use and development of systems.

The person we seek should have experience of COBOL in a mainframe environment, but also have had exposure to the personal computing sector, as this is a growing facility within the Group.

Your brief will be to provide effective programming and analytical support in identifying opportunities to improve sales effectiveness through computerised aids, training on current systems, improved sales systems, training of sales staff on software available within personal computing. The ability to produce systems and programming specifications, together with the task of ensuring that these will enhance the effectiveness of sales staff, will be the main objective.

Personal attributes required are a business orientated personality with the self-discipline to plan your own activity and the ability to interface at all levels, both in a user and training situation.

This is a career opportunity coupled with an attractive range of benefits, including profit sharing, private health plan and full relocation where necessary.

Candidates wishing to seize this opportunity should contact our Advising Consultant, **Brian Harris on 021 236 3781** (24 hour answering service) or send a Résumé to the **Birmingham** address shown below at the earliest opportunity.

Technical Sales & Management Appointments

ISCR Specialist Computer Recruitment Ltd

**SOUTH** James House, 46 James Street, London W1M 5HS 01-935 0671/486 0481

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(6504)

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(b) Analyst/Programmer — responsible to the Systems Manager for implementation of new systems and programs. A minimum of two years' relevant experience is required, and some Fortran exposure would be valuable.

Please write with full details to:
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Combined Actuarial Performance Services,
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Thornton

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Extensive training will be provided in PL/1, Easytrieve and basic systems analysis.

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**Mrs V. C. Fairhurst, Senior Personnel Manager, Brooke Bond Oxo Limited, Leon House, High Street, Croydon, Surrey CR9 1JQ. Tel: 01-686 8899 ext. 516.**

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**JNR CONSULTANT HP 3000** **to £12,000**

Due to expansion a company based in the West End seeks a Junior Consultant. Applicants should currently be in an Analyst or Analyst/Prog role with the desire to become more involved in Analysis. Experience of HP equipment would be useful but not essential. As there will be a good deal of client contact applicants must be professional in both appearance and attitude.

**PROGRAMMERS PASCAL/COBOL** **to £9,000**

Opportunity to join a progressive company in the West End who have just committed a large sum of money to continued development of their computer systems. Applicants should have a minimum of *one year's PASCAL or COBOL and will have the* opportunity to learn and work in both languages. Good prospects and conditions in this friendly but professional team.

**ANALYST/PROG HONEYWELL** **£11,000**

A large South West London based manufacturing company are seeking an Analyst/Prog with good COBOL exp. A number of micros have also been installed so exp. with BASIC would be useful. You will be working in a small dept. which runs a multi-application on-line system that will be gradually increased to include a purchase order system. An opportunity for someone to become involved.

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A rapidly expanding software house is currently recruiting Analyst/Programmers with a minimum of 18 months' DATABASIC gained in a PRIME or CMC environment. The software house actively encourages employees to service clients in a consultancy role therefore applicants should be presentable and have the ability to deal with first-time users. The client can offer job satisfaction, regular salary reviews and intensive training.

**PROGRAMMERS PL1** **to £11,500**

A company offering a range of financial services has several requirements for PL1 programmers. The minimum requirements is for 18 months' PL1 in a commercial environment for the programming *positions and up to four years' plus for the senior* posts. Applicants should have good all round programming skills to include design, coding and implementation. Due to the size of the client there is a recognised career path which would lead through to systems if desired.

**ANALYST/PROGRAMMERS RPGII/RPGIII** **£NEG**

We have many clients, all of whom are SYS34 or SYS38 users, who have current positions for programmers and analysts. Applicants should have a minimum of six months' RPG from a commercial background through to three years' + for the more senior positions (any MAAPICS would be of special interest). The companies range from Banking *through to Manufacturing and offer a wide range of* benefits.

**ALL LEVELS HP 3000** **to £15,000**

We have numerous Clients in London and the Home Counties who urgently require experienced HP personnel ranging from Progs. Analyst/Progs. through to Project Leaders. The minimum requirement is nine months' HP COBOL or BASIC for the junior positions, with proven analysis and supervisory skills for the senior levels. The companies range from small software houses to large in-house installations and offer a wide variety of prospects and perks.

**ANALYSTS LONDON** **to £13,500**

We have been retained by three London-based *companies to recruit Analysts with varying levels* of experience. A sound D.P. background is required with preference given to candidates with general accounting application exposure. All positions involve extensive work on new projects and offer good career prospects. Perks are varied and include large company benefits and discounts and relocation expenses where necessary.

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# DATA GENERAL

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**£10-14,000**

Thomas Cook Financial Services Ltd., a wholly owned subsidiary of Midland Bank plc, needs an experienced DG technical support programmer to join a small team involved with the development and support of a network of worldwide computer systems.

The job involves some programming in Business Basic, control of applications software, maintenance of software and site documentation libraries and participation in research and development activities. Future R & D work includes the evaluation of the DG desktop range of computers and the Xodiac and Infos software products for which relevant expertise would be of particular interest.

Applicants for this post must have extensive Data General experience at a technical level and in particular a thorough knowledge of Business Basic under RDOS, AOS and AOS/VS on Nova, Eclipse and MV series hardware.

You must be prepared to travel to support overseas sites as necessary and work some unsocial hours. In return, we offer a salary in the range of £10,000-£14,000 per annum, depending upon skills and experience, concessionary travel, low interest loans and relocation assistance if appropriate, to Peterborough.

Written applications giving full career details should be sent to Miss V Wood, Personnel Manager, Thomas Cook Financial Services Ltd, PO Box 36, Thorpe Wood, Peterborough, PE3 6SB.

Thomas Cook

(8542)

**JOBS FOR CONTRACT STAFF**

**As the economy picks up, so do the job prospects for contract staff at home and abroad . . . John Charlton reports**

# Horizons widen for skilled contractors

HAPPY days are definitely here again for contract staff, with many agencies reporting bumper bookings, though this applies in the main to those with a number of years' experience, particularly in online programming. But for batch programmers the market is diminishing as most firms are now able to meet their needs for these staff internally.

The upward trend in the UK economy has contributed most to this year's growth in the number of contract jobs now available. Demand is higher in the South-east, but there is also plenty of work to be found North of the Watford Gap.

Skilled staff can also broaden their horizons with a stint abroad and agencies report attractive vacancies in Western Europe and the US, on both the East and West Coasts.

Any agency worth its salt will match the applicant's experience to the potential employer's requirements, and will test would-be contractors' skills. For overseas jobs, agencies will also look after contractors' visa and work permit requirements.

Stuart Pope, a marketing executive with Guildford-based computer staff recruitment specialist Strand Computer Recruitment, confirms that life for contractors is getting rosier. "As the country cheers up everything cheers up, and 1984 is looking good for contractors. Employers are after programmers and analyst programmers with solid online skills. But there is not much demand for the average Cobol batch programmer.

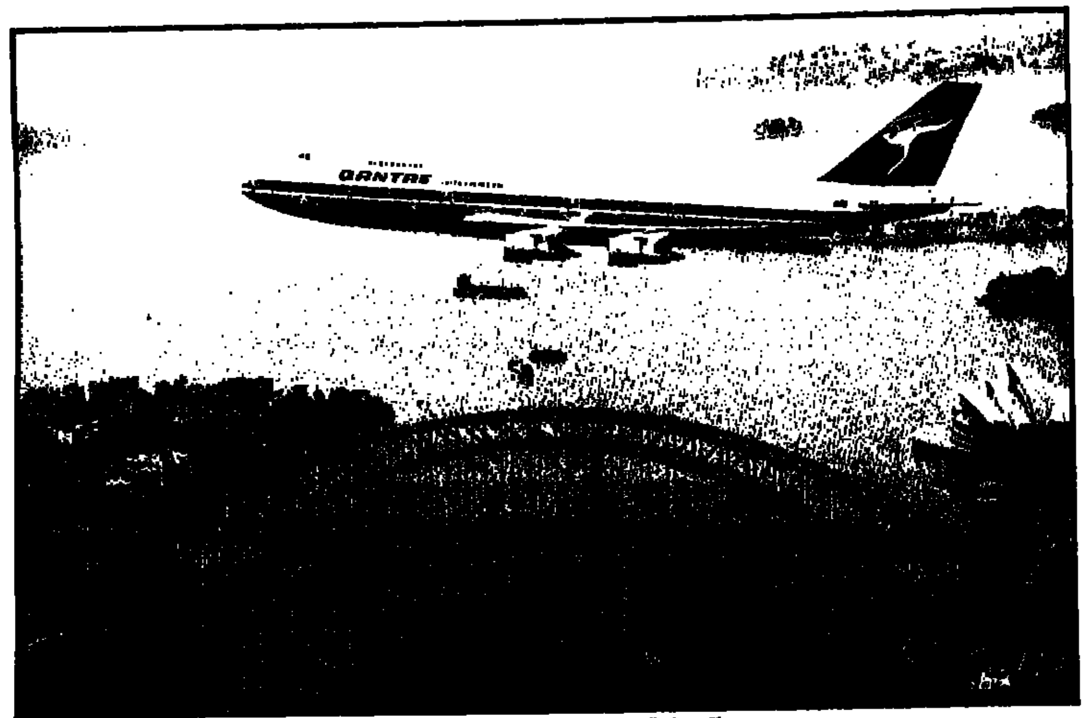
"We have a number of contracts for those with IBM System 38 experience in RPG III, and particularly in file handling for this mini.

"As the machine has only been out a relatively short time there are not many people around with System 38 skills, and those who have worked with System 34 are having difficulty moving up to the 38.

"As far as large IBM mainframes are concerned there is a strong need for MVS systems programmers, as well as online and database staff with good CICS and DL/1 experience."

Strand Computer Recruitment has more than 80 contract vacancies on its books, but Pope comments: "It's a very fast market and the number of vacancies we have at any given time can vary dramatically."

Strand also has some ICL contracts to fill. As with IBM, the call is for online programmers in IDMS and TPMS (teleprocessing management system). Work is available, too, for System 25 Assembler programmers for the ME29 minicomputer.



*For those prepared to fly off to Australia, good contracts await qualified staff.*

Contracts for programmers vary from £300 to £350 a week for those with the more common skills to £450 for good solid skills and experience.

For people who fancy a move to the Antipodes Strand has good contracts in Australia and New Zealand.

The lure of working abroad is one of the attractions of contracting, and languages – of the human variety – need not be a problem. Apart from the English-speaking countries, English is spoken widely in the Netherlands and Belgium.

Dave Hayton handles contract staff at the Knight agency in Manchester. This bureau covers the whole of the UK as well as specialising in contracts in Western Europe and the US.

Knight currently has contract vacancies in Holland, Belgium, Germany and the US.

In Holland and Belgium there are jobs for those who have worked on DEC, IBM and ICL equipment. These are for online or database skills.

In the US Knight has contracts paying upwards of $800 a week.

Hayton says: "In the US we have a particular need for staff with Unix and 'C' (the Unix applications language) experience. On the West Coast we have a number of contracts for those with IMS and database skills".

Anyone wanting to work in the US must have a visa and the so-called green card (a work permit).

Hayton says there are plenty of contracts throughout the UK, too. Again these tend to be for programmers and analyst/programmers with online and specialist skills.

Knight has a number of contracts demanding DEC Vax and PDP systems programming skills, as well as database and teleprocessing experience (IDMS and TPMS) on ICL equipment. Hayton says: "Coral programmers are in demand, and not only for defence work. There are jobs to offer for Coral programmers who have used the language on DEC Vax and PDP minis, as well as Ferranti and GEC machines".

According to Hayton the current rate for Knight contracts varies from £375 to £700 or £800 for the top jobs. He says demand for contract staff is "quite strong in the North-west and Scotland, and the South will always have a high demand".

It is not only actual computer experience that matters in getting good contract pay, but also the type of business in which the contractor has learnt his skills. For those who have been with the banks pay is that much higher.

Nick Poland, consulting manager with Croydon computer staff agency TLP, says: "You have to be a specialist to do well in contracting and we find that good computer experience allied to a banking background can bring in most money. We have jobs with banks paying up to £800 a week, and for these one would need at least four years' experience of online and database programming.

"But for any programmers with online skills 1984 will be a good year".

*John Charlton is deputy editor of* Computer Talk.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Contracts

IBM
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IBM MVS PL/1 PROGRAMMERS
IBM DOS MVS CICS COBOL ANALYST/PROGRAMMERS
IBM DOS/VSE CICS COBOL PROGRAMMERS
IBM DOS OR OS CICS COBOL (COMMS EXPERIENCE) ANALYST/PROGRAMMERS
IBM MANTIS COBOL ANALYST/PROGRAMMERS
IBM DOS/VSE COBOL ASSEMBLER CICS ANALYSTS, ANALYST/PROGRAMMERS
IBM MVS +/– IMS SYSTEMS PROGRAMMERS
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IBM MVS COBOL IMS DB/DC PROGRAMMERS
IBM MVS OS CICS SYSTEMS PROGRAMMERS
IBM OS OR MVS CICS (MACRO) ASSEMBLER PROGRAMMERS/ANALYSTS
IBM IMS DB/DC COBOL PROGRAMMERS
IBM COBOL IMS DB/DC (URGENT) PROGRAMMERS
IBM SY/38 RPG3 MAAPICS ANALYST/PROGRAMMERS (URGENT)

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| IBM PC, PC/DOS, M6800 | Programmer | South |
| IBM 8100, COBOL | Programmer | H. Counties |
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| COBOL, TPMS | Analyst/Programmer | London |
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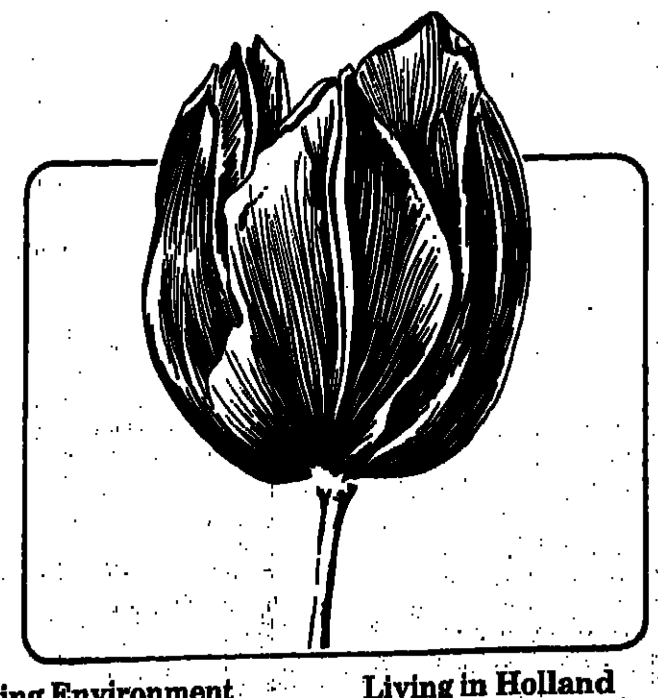
(8567)



**HOLLAND**

**Project Leader**
**Negotiable Salary**

This position has arisen due to the increasing demands on the time of the Project Development Manager and the person selected will deputise for him in his absence. Candidates should have about 7 years' strong IBM experience and have been responsible for at least one major project. A good commercial background is essential and knowledge of library systems would be an advantage. Exposure to IDMS and Shadow II would be an asset.



**Analyst/Programmer**
**Library Systems**
**£11–£17,000**

This opening offers the opportunity to become involved in important development work with strong emphasis on analysis. The ideal candidate should have between 3 and 5 years' analysis and programming experience, preferably in a DEC environment, although IBM would be acceptable. A good knowledge of COBOL is required together with a strong technical background. Experience of library systems is essential.

**IBM and DEC Installation**
The organisation utilises large IBM hardware and multiple DEC computers and several on-line database systems are operational. In addition, a network with distributed databases at its offices in North and South America and Europe is being set up. COBOL is the main programming language.

**Working Environment**
The development team comprises a number of experienced analyst programmers who work individually on projects or combine into small project teams as the need arises. A high proportion of the staff is British and English is the working language of the installation.

**Living in Holland**
Many British computer staff work in Holland and it is in many ways the "softest landing" for those who wish to move to continental Europe. The client is located in a small town near the coast and accommodation in the area is not difficult to find.

**Relocation**
A generous relocation package is offered to help candidates and their families settle in satisfactorily.

English, as well as being the working language of the installation, is generally spoken throughout Holland, which considerably eases settling-in problems.

OCC
Specialists since 1971 in UK and International computer & technical appointments

OCC Computer Personnel
5 Hospital Street
NANTWICH
Cheshire
(0270) 627 206

**Interviews**
Initial interviews with the client's representatives will be held in the UK during April.

For an initial discussion, ring me, Alison Jary, on (0270) 627206 office hours or (0270) 625436 other times, or write to me at the address opposite.

# T.I. 990
## PROGRAMMER/ANALYST

**Salary range £8,500 – £11,500 plus benefits** **Beds**

*"A unique opportunity for your career to take off with one of the world's major blue chip Organisations"*

We are a multi-national Corporation and wish to enlarge our Central Support Group which is currently involved in developing, implementing and supporting a range of systems for our European sales operation.

An opportunity has now been created within the Support Group, due to internal promotion, for an experienced Programmer/Analyst with TI 990/COBOL. Having seen the implementation of major new systems in a number of European sites, we require your skills to maintain the momentum of development, later moving into on-site implementation of these systems, travelling to such locations as Helsinki or Madrid.

Our ideal person will have sound experience of **TI 990 COBOL** and will be able and willing to travel, sometimes at short notice, to various locations throughout Europe for perhaps one or two weeks at a time.

Our network of TI 990's interfaces with a large IBM mainframe resource and, you will also become involved in this and other levels of computing. You will also have the opportunity of becoming involved in up-to-date technology including such interesting aspects as electronic mail. The Central Support Group forms part of a large Management Services Organisation which provides a comprehensive range of d.p. services to internal departments throughout Europe.

**We see this as a superb opportunity for an energetic and ambitious Programmer/Analyst who wishes to build a career with one of the world's major blue chip Organisations. We have the opportunities available – if you have the talents to match. We are quick to identify potential and promote on merit – not on length of service.**

**We also offer an attractive range of benefits which include profit sharing, private health plan and full relocation expenses. We have attractive modern premises situated close to the centre of an historic market town which is surrounded by pleasant Bedfordshire countryside, yet only 45 minutes from the heart of London.**

**Give your career a chance to really take off – contact our Advising Consultant Brian Harris on 021 236 3781** (24 hour answering service) or send him your current Résumé to the **Birmingham** address shown below, at the earliest possible opportunity.

(8384)

Technical Sales & Management Appointments

**STAFF**

**Specialist Computer Recruitment Ltd**

**SOUTH** James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461

**MIDLANDS & INTERNATIONAL** 35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781

**NORTH** International House, 84 Deansgate, Manchester M3 3EE 061-833 0427

**BELGIUM** Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7151/71

**HOLLAND** Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947

# MAXIMISE YOUR POTENTIAL

Our Client, a major driving force in the semi-conductor industry, has spearheaded many of the technical innovations over the past decade.

The European Division of this major blue-chip Organisation; is making full use of systems innovation to enhance and benefit the efficiency of their operations. With plants throughout Western Europe, the systems are developed and supported by a Central Support Group based in the UK. Due to major developments in hand and the need to further enhance this facility, they are able to offer two unique career opportunities for the following:

### Programmer/Analyst
**£8,500 – £11,500 + Benefits**

You will be developing and supporting systems throughout the European Division and will need to travel as required spending short periods off site if necessary.

Your skills will have come from IBM experience probably 370 based, including COBOL/DL1. With an integrated systems policy the use of communications and interface facilities incorporating TSO/SPF, is standard.

The role will demand self discipline in organising your own schedules and a business approach in analysing requirements and dealing with end users at all levels and in a variety of situations. Without doubt a challenging role, in an Organisation where ability, not length of service, is the criteria for career progression.

### Programmer
**£7,000 – £9,000 + Benefits**

Based in our Bedfordshire location, you will be working in an excellent environment that fully utilises the latest systems techniques. Supporting our development teams, you will be providing programming support to a wide variety of systems across a diverse applications spectrum.

The ability to work as part of a team and also independently calls for a versatile character and mature personality. These characteristics coupled with good IBM COBOL experience are the attributes which they seek in the successful Candidate and further career prospects would depend only on your ability.

The current environment utilises IBM mainframe facilities, with a range of minis and micros throughout the installation. Providing services to a group utilising over 22,000 terminals, 8,000 stand alone processors and 470+ disk drives creates a dynamic environment offering tremendous challenge and interest. These career openings within this highly regarded Organisation represent the opportunity to see yourself develop to the leading edge of the industry. Additional benefits include profit sharing, private health plan and full relocation where necessary.

Candidates should contact **Brian Harris on 021 236 3781** (24 hour answering service) or send a current Résumé to the **Birmingham** address shown below at the earliest opportunity.

(8385)

Technical Sales & Management Appointments

STAFF

Specialist Computer Recruitment Ltd

SOUTH James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461

MIDLANDS & INTERNATIONAL 35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781

NORTH International House, 84 Deansgate, Manchester M3 3EE 061-833 0427

BELGIUM Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7151/71

HOLLAND Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947



# SOFTWARE PROFESSIONALS

## The Netherlands DF1.50-DF1.100K

Logica BV, part of Logica Holdings, is the leading Systems House specialising in High Technology in Holland today.

Based in Rotterdam, Logica have achieved considerable growth and success in developing and implementing Systems in the following sectors: communications, energy, defence, industrial and finance/banking.

Logica BV is still a relatively small operating company, offering significant career growth combining the following factors: a) a wide variety of technical projects, b) European travel opportunities, c) project and manpower responsibilities and d) active involvement in client liaison/sales support.

The company is currently seeking to recruit candidates to work on advance Communications and Defence Systems.

Experience in one or more of the following areas is most appropriate.

- ★ Air Traffic Control
- ★ IBM Series 1
- ★ IBM Internals/Protocols
- ★ Teletex
- ★ Package Switching
- ★ X25
- ★ Signal Processing
- ★ Radar/Sonar Processing

For further written information please telephone or write (preferably including a C.V.) to April Advertising. Initial interviews will take place in London during April with final interviews in Rotterdam to follow.

هكذا من الأصل

**APRIL** Advertising

5 Brighton Road Surbiton Surrey KT6 5LX

(8456)

**01-399 9183**

# IBM Systems Programmers

**London** — **£10,000 to £17,000**

As a Systems Programmer we believe the first thing you will want is more technical information. The system base we use is an IBM 3081G and a 3033. On the software side we have MVS/SP, JES2, TSO, VSPC, CICS, IMS DB/DC plus a host of other products. We have a network of over 600 terminals in approximately 70 locations managed by ACF/VTAM.

Our future plans include upgrading the 3081 to a Model K, implementing MVS/XA, CICS 1.6 and NCCF. Other projects will include implementing a disk space management product, implementing a total performance monitoring and capacity planning system, a major security investigation and contributing to our future hardware and software developments.

To resource the above development projects we wish to recruit the following:

**Team Leader**

You will be leading a small, but highly technical team. For this you will need a good knowledge of MVS. You must be able to demonstrate supervisory experience and planning skills as an emphasis will be on leading your team.

**Systems Programmer**

You will need solid MVS experience for this position. In making this move you will be looking to greatly increase the software, planning and supervisory skills you have gained to date.

**Junior Systems Programmer**

For this position you will need around two years' Assembler experience. The specific software skills are not important. We are more interested in your ability and attitude.

Across all of these positions you can enhance your existing IBM systems software experience in a variety of directions. These include communications, personal computing, performance monitoring and capacity planning.

In parallel to our investment in computing technology we have an equal commitment to investing in our people through ongoing training. This will ensure that you are constantly improving your technical and personal skills.

Overall, the systems programming team plays a crucial and highly visible role within our Organisation. To apply for one of the above positions please contact our Advising Consultant, **Stephen Brown,** on **01-935 0671** or **04024 72610** evenings and weekends. Alternatively you can submit a detailed C.V., to him at the London office address below.

(8503)

Technical, Sales & Management Appointments

**SCR Specialist Computer Recruitment Ltd**

| SOUTH | MIDLANDS & INTERNATIONAL | NORTH | BELGIUM | HOLLAND |
|---|---|---|---|---|
| James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461 | 35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781 | International House, 84 Deansgate, Manchester M3 3EE 061-833 0427 | Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7161/71 | Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947 |

# MVS EXPERTS

**St. Albans** — **Package negotiable up to £25,000**

**Product Training in the U.S.A.** — **(including Company Car)**

Morino Associates, was established over ten years ago as a specialist IBM system software company, near Washington D.C. As a reflection of their success and the innovation and quality of their product range, for the second consecutive year they are among 'the Inc. 500: America's Fastest-Growing Companies.'

In 1982 they set up a UK base in St. Albans, from which to tackle the W. Europe/Middle East markets. Phase II of this progressive, sustained expansion now demands the appointment of an Associate and a Senior Associate to their Product Support Groups in the UK, W. Germany and U.S.A.

Such is the importance of these appointments that the Technical experience required is considerable:

* Excellent MVS externals.
* TSO/ISPF/CLIST.
* SAS, PL/1 (or similar) plus ASSEMBLER.
* Early Warning /INFO/MVS.
* MVS measurement sources.

Of considerable additional benefit will be debugging, tuning/capacity planning and other widely used system software tools experience (eg CICS/IMS... etc.)

The role encompasses the provision of first level support (installation, operational and data sources problem resolution), customer training and technical presentations, new product developments — **truly** diverse, challenging and interesting positions, which include Overseas customer responsibility.

For a prompt assessment of your suitability, in the strictest confidence, contact **NICK REID** on **01-935 0671** (9.00–5.30) or on 01-644 1973, evenings or weekends. Alternatively send a detailed Curriculum Vitae to him at the London office.

Interviews will be held at our Regional Offices, where appropriate.

(8505)

Technical, Sales & Management Appointments

**SCR Specialist Computer Recruitment Ltd**

| SOUTH | MIDLANDS & INTERNATIONAL | NORTH | BELGIUM | HOLLAND |
|---|---|---|---|---|
| James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461 | 35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781 | International House, 84 Deansgate, Manchester M3 3EE 061-833 0427 | Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7161/71 | Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947 |

**ADP Innsite**

# ANALYST/PROGRAMMER

**c.£8,750**

We are a fast growing and successful supplier of turnkey systems to the hotel and catering industry.

We are looking for an analyst/programmer who will have a minimum of two years' experience working in a commercial situation and a thorough knowledge of Dec Basic + or M Basic. Experience of Z80 assemble an advantage.

You will be responsible for our Food and Beverage Control Systems.

This position will appeal to someone with an appetite for work and who is self-motivated, and appreciates a close team spirit.

Benefits will include private medical insurance and Company pension scheme.

Applications in writing, enclosing current c.v. to: Stewart Boddy, Software Manager, ADP Hotel Services Limited, 2nd Floor, Heathrow House, Bath Road, Cranford, Hounslow, Middlesex TW5 9QP.

(8566)

# GRADUATE PROGRAMMER

Our company, an established and expanding software house, is able to offer its employees a whole variety of work. All our projects are based on clients' sites, most clients being household names and located in the London area. Currently, our workload includes involvement with ICL, IBM, Honeywell, Burroughs, NCR, Data General, DEC and VAX equipment and languages include COBOL Various Assemblers, Basic, RPG, PL1, CORAL and FORTRAN. You'll need at least 18 months' experience to command a salary in the £9,000-£15,000 range and your chances of an offer would be enhanced if you have experience of:

**ICL VME/B COBOL or**
**IBM CICS and COBOL or**
**Any CORAL**

We'll make a decision by the end of ONE INTERVIEW ONLY, so send a c.v. (typed or handwritten) to:

**MMT COMPUTING plc**
**New Gallery House**
**6 Vigo Street, London, W1**

(8543)

Xitan is the foremost UK distributor of professional Microcomputer Software to the trade. Due to continuing rapid expansion we now have a vacancy within our support department.

# TECHNICAL SUPPORT

You will be responsible for providing technical support and trouble shooting backup to the wide range of software that we distribute for CP/M, CP/M-86, PC-DOS, MS-DOS and other related operating systems.

This position provides an excellent opportunity for expanding your knowledge in the area of the latest developments in the fast-moving software industry.

Applicants will preferably be graduates in computer science or related subjects: however, relevant experience and the ability to work logically on a customer orientated outlook is equally important.

As part of the Comart Group of Companies the above vacancy has a range of benefits including pensions scheme, company share scheme, sickness benefit and 20 days' holiday p.a.

Application form from:

**XITAN LIMITED**
**Xitan House**
**27 Salisbury Road, Totton**
**Southampton SO4 3HX**
**Telephone: (0703) 871211** (8358)

XITAN

# MAJOR U.S. FLOPPY DISK MANUFACTURER

is opening its European Technical Support Office in Brussels and has an immediate opportunity for a

## EUROPEAN TECHNICAL SUPPORT MANAGER

The candidate will have five-ten years of field engineering/customer support experience with an electrical engineering or computer science degree.

Working throughout Europe and the U.K. with travel to California, the candidate will provide pre and post sales technical support to Europe's major microcomputer OEMs, system integrators and distributors, diagnose field problems and trouble shoot.

The company is one of the new generation floppy manufacturers offering excellent growth opportunities to build a European support organisation.

French and German language capability useful, as well as knowledge of microcomputer operating systems and peripheral interfaces.

Please send your c.v. in confidence to:
Mr. Jon Zakin,
Consultech International Corp.
Boulevard de Waterloo, 53/Box 2
B-1000 Brussels, Belgium.

(8243)

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# ● KPG PERMANENT ● KPG PERMANENT ●

**DATA PROCESSING MANAGER — HERTS — £12,000+**

This highly successful manufacturing company now seeks an exceptional person to fill their vacant DPM position. Man management and excellent communication skills are paramount together with fluency in RPGII and sound knowledge of IBM hardware-Systems 34 and 38. This is a relatively small department where scope for creativity and initiative exist in abundance. An understanding of MAAPICS although not imperative would prove useful. Full relocation package available. REF: 8383/HP

**ANALYST/PROGRAMMER — HERTS — £12,000**

A leading insurance company now seeks a total of three analyst programmers to strengthen their thriving DP department. Successful candidates will be educated to degree level and have a minimum of two years' experience in structured programming techniques and transaction processing. Initial projects will entail involvement in analysis redesign and enhancements of present in-house systems. Fluency in FORTRAN is imperative so too the ability to work as part of a young dynamic team. REF: 8495/HP

**SENIOR ANALYST, PROGRAMMER — NORTH LONDON — TO £11,000**

Our client, a leading motor manufacturer require a programmer and senior analyst who are conversant with IBM hardware and who have attained a high level of fluency in PL1. Sound academic background together with experience of a manufacturing environment are desirable. Both positions involve excellent possibilities for self-development and career progression. Highly attractive relocation package available. REF: 8499/HP

Ring Haydn Parry at KPG or 01-747 0969 (evenings/weekends)

**SENIOR ANALYST PROGRAMMER — TO £12,500**

A major f.m.c.g. manufacturing company in West London is currently looking to recruit an additional experienced HP3000 Analyst/Programmer. You should have at least three years' Cobol experience under Image, View and Query and have the ability to work independently on systems design. You will be expected to lead a small team on major project developments — and should have had previous experience working from conception to implementation. REF: 8400/MJ

**SENIOR ANALYST/PROGRAMMER — WEST LONDON — c.£14,500 + BENS**

Leading a small team, you will be responsible for business-related applications from investigation through to implementation. You will be expected to participate in the formulation of technical policy concerning systems development and enhancement. With at least two years as a Team Leader with a sound background in programming and analysis (preferably Cobol and Fortran) — you will be looking to further your career in an on-line financial systems environment. REF: 8501/MJ

**MVS/XA, SNA, SAS — SYSTEMS PROGRAMMERS — CITY TO £15,000**

Ring David Mason Johns at KPG or on 01-891 0906

**JUNIOR PROGRAMMER/PROGRAMMER — CITY — £7.5-£10K + BONUS**

Minimum one year's experience WANG/COBOL for international insurance company. Excellent career prospects within a young, progressive, development environment. REF: 402/DF

**PROGRAMMER — BIRMINGHAM — £8,500K**

COBOL/Commercial background. Some analytical experience useful. Experience on UNIVAC/IBM/HP or DEC is required to join this small DP site within a major manufacturing company. REF: 484/DF

**PROG./ANALYST PROGRAMMERS — WARKS — £10.5K + BONUS + BENEFITS**

Two to three years' experience on Sperry 9480/1166, Mapper using COBOL or RPG. Late twenties, early thirties. You will be working in a small team helping with rewrites for a large on-line system linking up this manufacturing group. REF: 489/DF

**CENTRAL LONDON**

Young company, expanding rapidly to meet business demands, seek additional IBM CICS or ICL TPMS-COBOL personnel to work on payroll and personnel applications. Excellent prospects for career development.

**TECHNICAL CONSULTANT — £15K + CAR**

Prog. background, accounts experience useful. Q.A. role to assist both customer and support the users.

**SUPPORT CONSULTANT — £12K**

Payroll app. — 95% (UNIPAY ADV.) Computing techniques 5%. To answer all client queries. Excellent training given.

**SENIOR PROGRAMMER — £15K**

To work on financial application doing conversions in the Special Packages. REF: 490/DF

Contact Diana Fabregas at KPG or on 01-789 8714 (evenings or weekends)

**PROGRAMMER — CITY — TO £11,500 + MORTGAGE SUBS**

A good COBOL Programmer with DL/1 experience on IBM mainframes supporting DOS/VSE is required to work in the small highly skilled DP department of this company who are offering all the usual benefits of a large financial organisation. REF: 1CW/PH

**PROGRAMMER — SURREY — TO £9,500 + MORTGAGE SUBS**

A large commercial company currently require a COBOL programmer with 18 months' VME 2900 experience to work in their large DP department running ICL 2904. This company offer excellent benefits and the chance to learn IDMS/TPMS and system efficiency. REF: 2CW/PH

**SYSTEMS ANALYSTS — TO £15,000**
**ANALYST/PROGRAMMERS — TO £13,000**
**PROGRAMMER — TO £10,000**
**+ EXCELLENT BENEFITS PACKAGE**

One of the UK's leading finance houses are expanding the systems development section of their already large computer department. Currently running IBM mainframes (DOS/VSE) with significant use of DEC PDP/11 (RSX11) network, for data capture. This company have vacancies within three of the four multi-disciplined project groups.

We are interested to hear from young DP professionals with significant experience of the above hardware and relative software knowledge including PL/1 or ASSEMBLER, COBOL, FORTRAN or MARK IV, CICS and DL/1. REF: 3CW/PH.

Contact Peter Hennessey at KPG or on 0293 518322 (evenings/weekends)

**KPG**
**01-948 5922**

KPG Computer Support Services Limited
Cobden House, Park Lane,
Richmond, Surrey, TW9 2RA

**● KPG PERMANENT ●**

(8518)

# PUBLIC SECTOR APPOINTMENTS

**STAFFORDSHIRE COUNTY COUNCIL**

**Principal Systems Programmer up to £11,052**
**Senior Systems Programmer up to £10,539**
**Senior Programmers up to £10,539**
**Senior Systems Analysts up to £10,539**

The County Council computer installation is based on two 8Mb IBM 4341 mainframes with 3370 disks (over 6000Mb) and 3420 tapes running under VM 370 and DOS/VSE serving all departments of the Authority and four District Councils. There are over 160 local and remote terminals installed and more will be installed during 1984/85. The main programming language is PL1 with DL1 and CICS; APL (with ADI and ADRS) and EASYTRIEVE are also in use.

Applicants for the Systems Programmer posts should ideally have several years' experience in one or more of the software products mentioned. Senior Programmers will require knowledge of PL1 preferably with DL1 and CICS and knowledge of Assembler will also be an advantage. For the Systems Analysts posts a record of successful system design and implementation preferably of terminal based systems will be the prime qualification, although an experienced applications programmer wishing to move to systems analysis would be considered.

Training as appropriate will be given to successful applicants for the above posts and salary within the scales being offered is negotiable according to experience. In appropriate cases the County Council will consider the granting of financial assistance towards removal and lodging expenses.

**There are no application forms and written applications, which should include full details of the applicant's computing and employment experience, should be sent to the County Treasurer, P.O. Box 10, County Buildings, Eastgate Street, Stafford ST16 2NF by March 30, 1984. Telephone enquiries may be made to Stafford (0785) 3121 – Mr. J. T. Tucker, extension 6305 or Mr. M. A. Holt, extension 6480. All applicants are asked to note that it is the County Council's view that it is desirable for their employees to be members of an appropriate trade union.**

(8545)

## Teesside Polytechnic

**ONE YEAR FULL-TIME**
Conversion Course

**MASTER OF SCIENCE IN INFORMATION TECHNOLOGY**

Departments of Computer Science and Electrical, Instrumentation and Control Engineering.

The SERC is prepared to offer suitable candidates a limited number of research studentships.

For details and application forms contact:

**Departmental Administrator**
**Department of Computer Science**
**Teesside Polytechnic**
**Borough Road, Middlesbrough**
**Cleveland TS1 3BA**
**Tel: (0642) 218121 Extn. 4270**

(8493)

EAST ANGLIAN REGIONAL HEALTH AUTHORITY

## Experienced Systems Designers/Programmers

required to join a development section of over 30 staff providing computer systems in patient administration, child health, finance etc., for health authorities in East Anglia. Equipment includes district based CTL and Datapoint computers for patient administration and finance respectively, as well as a large central ICL 2966.

Applicants should preferably be educated to degree level and experience in COBOL would be an advantage.

Salary scale: £7,404-£9,025 per annum.

Applicants with less than two years' experience will be considered but at a lower starting salary.

Application form and job description from the Regional Personnel Officer, Union Lane, Cambridge CB4 1RF. Tel: (0223) 61212 ext. 325.

Closing date: April 6, 1984.

(8544)

**THE UNITED MEDICAL AND DENTAL SCHOOLS OF GUY'S AND ST THOMAS'S HOSPITALS**

## PROGRAMMER/STATISTICIAN

required to work in the Unit for Metabolic Medicine and Community Medicine Department at Guy's Hospital, in the planning, implementation and analytical stages of a project concerned with the prevention and treatment of diabetic kidney disease in large populations. General statistical help would also be required in the work of the Units.

Epidemiological/clinical trial interests or experience would be valuable. Salary in range £6,310-£9,425 plus London Allowance. Initial appointment would be for two years.

Applications should be made, in writing, including curriculum vitae and names and addresses of three referees, to the Deputy Secretary, United Medical and Dental Schools, Guy's Hospital Medical School, London Bridge, London SE1 9RT, quoting Ref. MM1.

(8494)

## Principal Analyst Programmer

**Career Development Opportunity by the Sea to £11,364**

Brighton – a town with a modern progressive authority and a considerable record of achievement. Brighton – the biggest urban community in Sussex, a good place to develop your career. Lying between the South Downs and the sea, just an hour from London it is one of the most attractive locations in the country, the home of the famous Brighton Pavilion, and a principal European conference and entertainment centre.

This key appointment offers you an absorbing career full of professional challenge in an environment which features

- a wide range of applications few companies can match in a developing installation
- concentration on systems development

The installation is running an IBM 4331-2 (4 MB) machine with VM/DOS VSE and CMS. Other software in use includes CICS (supporting a significant terminal network) and DL 1. The main programming language used is COBOL although some use is made of APL, ADI and ADRS along with products like CA-EARL.

If you have two years working experience with COBOL we would like to hear from you. IBM experience advantageous but other relevant backgrounds carefully considered. Ideally you will have had at least 5 years in DP including sound analysis experience. Supervisory skills helpful.

Generous relocation assistance includes grants of up to £3,750 plus reimbursement of removal costs, lodging and travel allowances.

To discuss this opportunity, please telephone Brighton (0273) 29801 and talk to Ivor Blatchford on extension 464 or Jim Sweeney or Mike Taylor on extension 395.
An application form and information package can be obtained by telephoning Brighton (0273) 29801 extension 466.
Closing date 6 April.

Borough of **Brighton**

(8480)

**THE LONDON HOSPITAL MEDICAL COLLEGE**
(University of London)

## PROGRAMMER

Applications are invited for the post of programmer in the Computer Centre of the London Hospital Medical College. The person appointed will work on ULCC CRAY-1 and Amdahl machines, Queen Mary College 2988, and local mini and microcomputers. Programming ability in Fortran, Pascal or C and interest in biomedical research applications is essential. Some knowledge of statistics (especially packages such as SPSS) is desirable. The programmer will develop software for medical applications and be involved in the Centre's research work in 3D computer graphics, computer-aided learning and expert systems.

Salary within University Grade IB £6,310 to £9,875 plus £1,186 London Allowance (under review). Four weeks' annual leave plus extra days when the College is closed.

Applications in writing to the College Secretary, The London Hospital Medical College, Turner Street, London E1 2AD as soon as possible.

Telephone enquiries to Mr Cookson, Head of Computer Centre, 01-377 2566.

(8491)

University of Reading
Department of Geography

**POSTDOCTORAL RESEARCH OFFICER**
**Software for Image Processing**

Applications are invited for the above post, to start as soon as possible, for a fixed period until March 1987 with a maximum starting salary up to approximately £9,500 p.a. plus USS. NERC has awarded the Department a Special Topic Research Grant for the development of improved image processing and classification algorithms for remotely sensed data. The primary requirement is a Ph.D which has involved significant software development. Research in image processing, pattern recognition, earth resources or digital cartography would be advantageous, but other candidates are encouraged to apply.

Application form and further details available from Personnel Office, University of Reading, Whiteknights, Reading RG6 2AH, or ring 0734-875123 ext. 233. Please quote Ref. R.14A. Closing date for applications 13 April, 1984.

(8478)

*UNIVERSITY OF GLASGOW COMPUTING SERVICE*

## SYSTEMS PROGRAMMER

Applications are invited for a Systems Programmer in the Mainframe Section of the University's Computing Service. The work requires a keen interest in, and preferably experience of, the fundamentals of the ICL VME operating system, and will involve both day-to-day maintenance and long term development activities. The appointment will be made on Grade 1A/Grade II of the national Other Related Staff scales, currently £7,190-£11,615/£11,190-£14,125 (but due for revision w.e.f. 1st April, 1984).

Applicants should be in the possession of a good Honours Degree (or equivalent) and will be expected to have, or to be able to acquire, an indepth knowledge of the VME operating system.

Further particulars may be obtained from the Academic Personnel Office, University of Glasgow, Glasgow, G12 8QQ, where applications (6 copies), giving the names and addresses of not more than three referees, should be lodged on or before 24th April, 1984.

In reply please quote Ref. No. 5100/1P.

(8492)

**DURHAM CONSTABULARY**

Applications (male or female) are invited for the following civilian post based at Force Headquarters, Durham:

## COMPUTER OFFICER

(Salary £10,242 to £11,364 per annum)

This is a post responsible (along with the Computer Manager) for the analysis development, implementation and operation of multi-user computer systems using Perkin Elmer 3200 range mini computers, with Reliance data management.

Applicants should be educated to degree standard, and have sufficient relevant experience to undertake this highly responsible and demanding post.

The Authority has a scheme for the payment of removal expenses in appropriate cases.

A car-user allowance is payable.

All appointments are subject to a satisfactory medical report and to the provisions of the Local Government Superannuation Acts.

Canvassing, either directly or indirectly, will disqualify.

Application form and further details obtainable from The Chief Constable (Civilian Establishment), Police Headquarters, Aykley Heads, Durham DH1 5TT. Closing date April 5th, 1984.

(8547)

**THE LABOUR PARTY**
requires

## A COMPUTER OPERATOR

The Party is currently transferring all its financial records to a Hewlett-Packard 3000/30. Previous experience with Hewlett-Packard systems would be a distinct advantage. Salary range £6,470-£7,070 p.a., depending on appropriate experience in a similar capacity. The Labour Party is an Equal Opportunities Employer. Application forms are obtainable from the Administrative and Personnel Officer, The Labour Party, 150 Walworth Road, London, SE17 1JT (tel. 01-703 0833) and should be returned by not later than Friday, 30 March, 1984.

(8501)

**WEST YORKSHIRE**
Metropolitan County Council

**COUNTY/POLICE COMPUTING**

## SENIOR COMPUTER OFFICERS

£10,539-£11,703
Post Refs: FD 76007/6

## COMPUTER OFFICERS

£6,264-£9,660
Post Refs: FD 28209/13/14

The successful applicants will be seconded from the Department of Finance to the West Yorkshire Metropolitan Police Computer Projects Unit. This team is currently developing the second phase of an established Ferranti Argus real time Command and Control system and is in the process of implementing a range of financial, administrative and operational systems on two installed Microdata SEQUOIA mini-computers. Further development is planned for a wide range of systems.

All posts require sound experience in real time programming (preferably CORAL) and/or MICRODATA BASIC, together with the following qualifications and experience. Further details will be supplied with the application forms.

The Senior Computer Officers will possess a degree or CIPFA qualification, with a minimum of three years' experience at a senior level.

The Computer Officers will have a degree or HND in Computer Studies, together with appropriate training and experience. Candidates who have a good knowledge and experience of administrative or technical procedures who also hold at least a degree or part administrative qualification will be considered for training development and work in the Computer Unit.

The posts will be located in either Wakefield or Bradford, close to the M1 and M62 and within easy reach of National Parks and East Coast resorts. This is an area of reasonably priced housing. Assistance with relocation expenses will be given in appropriate cases.

Application forms and further details from Director of Manpower Services, 8 St John's North, Wakefield WF1 3QA – telephone Wakefield 367111 ext 2840. To be returned by 13 April, 1984.

(8517)

Equal opportunity open to all.

**ilea** Inner London Education Authority

## Director of ILECC

**Inner London Educational Computing Centre**
**John Ruskin Street SE5 0PQ**

**Salary Range: £13,812-£15,492 (under review) plus £1,347 London Weighting Allowance**

ILECC provides hardware and software support for the computing resources used by ILEA's schools, colleges of further and higher education services: potentially over a thousand institutions.

Applications are invited for the post of Director of ILECC. This is a senior appointment to run a well-equipped, well-staffed centre. The successful candidate will have had extensive experience of computing. He/she will have demonstrated ability to manage a professional team dealing with all aspects of computing.

The successful candidate will be expected to take up the post on September 1, 1984.

**Application forms and further details are available from: The Education Officer, EO/Estab 1b, Room 365, The County Hall, London SE1 7PB. Please enclose a stamped, addressed envelope. Closing date for the return of completed application forms is April 6, 1984.**

*ILEA is an equal opportunities employer.*

(8469)

**UNIVERSITY OF DURHAM**

**SENIOR DEMONSTRATOR IN COMPUTING**

Applications are invited from graduates with relevant experience for appointment as SENIOR DEMONSTRATOR in COMPUTING in the Department of Mathematical Sciences for three years from October 1, 1984. The main duty will be to assist with the teaching of PASCAL programming and with the supervision of practical work for first-year classes.

Initial salary in the range £6,310-£8,530 p.a. on National Grade 1A or 1B, plus superannuation.

Applications (three copies) naming three referees, should be sent by April 16, 1984 to the Registrar, Science Laboratories, South Road, Durham DH1 3LE, from whom further particulars may be obtained.

(8477)

**UMIST**
**DEPARTMENT OF COMPUTATION**
**COMPUTER MANAGER**

Applications are invited for the post of Site Manager for Alvey Software Engineering GEC Series 63 Infrastructure Machine. The person appointed will be responsible for hardware and software management, usage administration and support programming for Software Engineering research. The appointment is for three years with the probability of further extension.

Salary will be according to age, qualifications and experience in the range £7190-£14125 p.a.

Requests for application forms and further particulars, quoting reference COM/32 BC, should be sent to The Registrar, Room E9, UMIST, PO Box 88, Manchester M60 1QD. The closing date is May 1, 1984.

(8548)

**GLC**
Working for London

## Operations Analyst

The GLC Central Computer Service is one of the most advanced computer installations in the country. An IBM MVS environment supports a large teleprocessing network, running over a variety of leased lines using BSC, ASC and SDLC Protocols via 3705 and 3274 control units, with a large number of TTY's micros and 3270 type terminals using VTAM/CICS/ATMS/STAIRS/ADABAS and VSPC applications.

This post will be mainly concerned with the installation of new equipment, both at central site and remote locations. Responsibilities will also include day-to-day control of the network, including fault tracing.

A sound knowledge of teleprocessing equipment and proven communication skills are essential. This post is suitable for job sharing.

**Salary: £9,000-£9,993 inclusive.**

*For an application form, to be returned by 6th April 1984, write to: Central Computer Service, Greater London Council, Room 693, The County Hall, SE1 7PB or telephone 01-633 6089.*

**The GLC welcomes applicants from all sections of the community, irrespective of their sex, ethnic origin, colour, sexual orientation or disability, if they have the necessary attributes to do the job.**

(8484)

*The GLC is an equal opportunities employer*

# PUBLIC SECTOR

**HASTINGS BOROUGH COUNCIL**

## PROGRAMMER

**£7,691-£8,396 per annum**
**SUSSEX COAST**

An excellent opportunity exists for an experienced COBOL programmer to join a small development team involved in the design of interesting new computer applications.

The Authority operate an ICL ME29 computer recently linked with an extensive network of micros and terminals in most of the Departments of the Council.

Housing costs in Hastings are surprisingly modest, and removal expenses and a relocation grant of up to £1,500, may be considered. We may also help with temporary accommodation.

Further details of this opportunity can be discussed with our Computer Manager, Stan Hyland on (0424) 422860, or contact the Personnel Unit,

**47 Wellington Square,**
**Hastings,**
**E. Sussex.**

For an application form (0424) 439591
(Ref: 020/165)
Closing date 5th April, 1984

(8531)

**UNIVERSITY OF LIVERPOOL**
**COMPUTER LABORATORY**

## APPLICATIONS SUPPORT STAFF

Applications are sought for graduates to work within the Applications Section of the Computer Laboratory. Successful applicants will be involved with evaluation, implementation, maintenance and development of applications software on the Laboratory's IBM 4341, VAX 11/780s and the replacement of the ICL 1906S. Familiarity with high level language programming essential. A degree qualification or equivalent is necessary for this post. Salary on the scale £7,190-£11,615 p.a. The possibility exists for promotion to a scale rising to £14,125. Further particulars and application forms may be obtained from The Registrar, The University, P.O. Box 147, Liverpool L69 3BX. Applications close on 13 April, 1984.

Quote Ref: RV/267/CW.

(8500)

**NATIONAL INSTITUTE OF AGRICULTURAL BOTANY**

**STATISTICAL COMPUTER PROGRAMMER**

to join small team handling data from national crop variety trials and seed certification schemes. Opportunities for FORTRAN, COBOL and BASIC programming; major new system using PASCAL being written for use with planned local network based on SIRIUS microcomputers.

Applicants should have HND equivalent in Computer Science. Salary on Scientific Officer scale £5,682-£7,765 p.a.

Five-day week, flexible hours, non-contributory pension scheme.

Further details from the Executive Officer (Personnel), NIAB, Huntingdon Road, Cambridge CB3 0LE. Tel: Cambridge (0223) 276381, ext. 234, quoting Ref. SV/797/CW. Closing date April 6, 1984.

(8563)

## 2 PRINCIPAL LECTURERS

**Salary: £12,519-£15,744**

## 7 SENIOR LECTURERS/LECTURERS II

**Salary: £7,215-£13,443**

## 2 RESEARCH ASSISTANTS

**Salary: £7,215-£11,568**

(Level of appointment and starting salary dependent upon qualifications and experience. A National salary award is anticipated April 1984)

**IN THE DEPARTMENT OF COMMUNICATION ENGINEERING AND DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING**

Required to join a lively multidisciplinary group involved in:
(i) teaching undergraduates, including those on an MEng programme, and diploma students.
(ii) research and consultancy covering a wide range of activities as detailed by the subject areas given below.

Applicants should hold a first degree in engineering or related discipline; together with relevant industrial, teaching or research experience.

**Lectureships in:**

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Computer Aided Digital
LSI/VSLI System Design
Artificial Intelligence in
Satellite Communications
Digital Communications
Software Engineering
Systems Design
Computer Vision Systems
Engineering
Computer Graphics and Image Processing

**Research Assistantships in:**

Software Design Tools
Active Tactile Sensors

Application form to be returned by Friday, April 6th, 1984, can be obtained, together with further particulars, from the Personnel Office, Plymouth Polytechnic, Drake Circus, PLYMOUTH PL4 8AA. Tel: Plymouth (0752) 264639.

Plymouth Polytechnic

(8336)

**STROUD – IN THE COTSWOLDS**

## ANALYST/PROGRAMMER

to be responsible for maintaining existing systems and developing new systems to run on an IBM System 34.

The successful applicant must have proven experience of RPG II programming and the ability to understand, analyse and react quickly to user requirements. Solid experience is more important than academic qualifications and a working knowledge of engineering and financial systems in a manufacturing environment will be of help.

We are an international leader in Mechanical Handling Engineering and the successful applicant, who must have a versatile approach, will report to the Systems Manager.

SALARY NEGOTIABLE

Please apply with full details to: The Personnel Officer, Redler Conveyors Limited, Dudbridge, STROUD, Gloucestershire GL5 3EY. Tel: (045 36) 3611.

(8400)

**SMR**
Sales & Marketing Recruiters Ltd
Leaders in High Technology Recruitment

## SALES EXECUTIVES

At the present time we are handling over 400 job opportunities for salespeople involving over 200 computer companies, with a range of typical earnings from £18,000 to

**£42,000 + Company Car**

Of course, other recruitment consultancies may claim to offer similar facilities, but none can equal our capability when it comes to truly understanding the career needs of the individual and the availability of pertinent job opportunities. We create "The Sales Bit" each week, and Alan Williams' new book "All About Selling" (McGraw Hill) also bears witness to our perception of the realities of selling.

Call us now and fix an appointment to discuss your career needs. We might even sell you a copy of Alan's book!

(8539)

LONDON & SOUTH: 29 Oxford Street, London W1 (01) 734 9776
MIDLANDS & NORTH: Cathedral House, Beacon Street, Lichfield, Staffs (05432) 55612
Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

OECD / OCDE

**ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

Headquartered in Paris, the OECD is a major International Organisation collecting and processing large volumes of economic data.

To respond to the growing demand for information processing services from economists and statisticians, the Organisation is currently seeking two high-level professionals for its Computer Operations Division.

## DEPUTY OPERATIONS MANAGER

Responsible for the planning and supervision of the daily operations and maintenance activities for the Organisation's Burroughs and IBM computer installations, the successful candidate will have a:

- degree in data processing or other relevant discipline;
- minimum of 5 years data processing experience in an interactive environment with a large community of users;
- proven ability to coordinate and supervise the work of staff of several units and liaise with equipment manufacturers.

(Ref. WEEK (83)39)

## DATA COMMUNICATIONS ANALYST

Reporting to the Head of Systems Software, the appointee will be responsible for the installation and maintenance of several Burroughs and IBM networks and for the development of the communications software.

The successful candidate will have a:

- degree in data processing or other relevant discipline;
- minimum of 4 years practical experience in data communications;
- expertise in: standard communications protocols, European standards for local area and international networks, and good knowledge of communications software.

Familiarity with burroughs data communications and software is desirable. (Ref. WEEK (83) 33)

Attractive salaries and excellent benefits are offered. Work will be carried out in Paris but occasional travel might be necessary.

Vacancies open equally to both male and female candidates.

Applications from nationals of member countries, together with detailed CV form in english or french and specifying the [chosen post] should be sent to: Personnel Division OECD, 2, rue André Pascal 75775 PARIS CEDEX 16

(8384)

## ANALYST PROGRAMMER

**BERMUDA**
**Salary circa $25,000 p.a. TAX FREE**

Our clients an Insurance Company based on the beautiful Island of Bermuda are seeking to appoint an Analyst Programmer for a one-two year tour. Responsibilities will include credit control aspects and statistical data – Hardware WANG VS.

For a discussion, in confidence, call Michael Wood or Trevor James on 01-481 8111.

**IPS GROUP**

Insurance Personnel Selection Ltd, Lloyds Avenue House, 6 Lloyds Avenue, London EC3N 3ES. Telephone: 01-481 8111

**MUSIC SCENE!**

**Programmer £10-£12K Richmond Border**

Use your Cobol experience to develop systems on a VAX mini in this easy-going recording company environment. Good salary, new premises and free records of new releases, etc.

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**SALES BIT**

Quality of Management – 87

# Why salesmen must be in at the installation

LAST week I described some of my experiences involving negotiation for and installation of a small business computer based on microcomputer equipment. The reason for doing so was not to give a public display of my inadequacies as a business manager, but rather to give to those salespeople involved in the sale of such systems some appreciation of what actually happens immediately after they sign up the deal and go rushing off to make the next one.

It is also my intention to dispel any illusions that installing a packaged system is entirely without problems, for there are many factors involved other than whether or not the hardware works properly and the software is bug-free.

In my experience, the major snags are related to the necessary changes in operational procedures, particularly as far as order and discipline are concerned, and the nasty habit of flushing out past and present errors and exceptions.

In a manual system there is so much more flexibility as far as compensating errors, mis-postings, incorrect analysis and the like are concerned. If a book-keeper wants to run a blind eye to an accounting inbalance or fudge the figures, there is considerable scope for him to do do, but the computer is not such a reliable ally.

It basically cannot tolerate anything illogical; so when the software detects something out of line, the machine starts to give you a bad time either by nagging you to death or simply refusing to work with you at all. Book-keepers are such kind and considerate people always influenced by what they think you want or ought to hear, whereas the computer doesn't give a damn and tells you like it is, irrespective of your emotional state. Altruism is dead, long live the computer!

So, what are the lessons I have learned from my first experience at the other side of the computer sales equation?

The first thing I learned about turnkey systems, particularly those based on microcomputers and packaged software, was the importance of the vendor because he is totally conversant with his product. I don't mean all that stuff about transfer rates, capacities, nature of the operating system, size of disc, and so on.

What I mean is when questions come up like: Can I get a profit and loss account for the past month as well as the year to-date and how do I produce it? We produce our first credit control document 21 days after the invoice has been despatched in the form of a personalised letter. Could you produce that automatically, and how would you go about it?

I can tell you I had dozens of questions like this from the guy from Peach Data. It was then that I learned how irritating it would have been if the reply to any of my questions had been, "Sorry, I don't know, but I know someone who does."

I wanted to make some decisions about buying a computer, but how the hell could I do it without all the information I needed right away? As it happened, the man from Peach not only knew everything about all the facilities I needed to enquire about but also answers to important questions that hadn't even occurred to me. That was not only impressive but gave me absolute confidence in the man.

After all, what could make a manager more secure than doing business with someone who apparently knows more about the subject at hand than himself?

Lesson number one: there is no selling technique strong enough to compensate for ignorance of one's own product.

The computer industry has a considerable proportion of its sales population rushing around with solutions in need of a problem. It is the way of the inadequate salesman that he will concentrate his presentation almost entirely upon what his product will do rather than what the buyer actually needs or wants.

In my particular case, what I needed was someone who could look at our accounting procedures and tell us how their computer system would deal with them. If there was any way of improving our methodology as well as our speed of processing and access to information, we wanted to know.

As it turned out, the man from

**I found the process of implementation not only extremely demanding but also an invaluable opportunity for cleaning up the books**

Peach was a qualified accountant which not only gave him the ability to understand immediately our existing practices but also enabled him to make some very constructive suggestions about ways in which we could do some things better.

Lesson two. The chances of presenting the buyer with an attractive proposition are extremely slim if the salesman does not get to grips with the fundamental nature of the problem, eg selling business systems without thorough understanding of business accounting practice negates most chances of success.

From the end-user's point of view, I learned a lot about many of the unpredictable ramifications of putting in a computer system. Anyone with any business perception will expect to have problems at the implementation stage. The trouble is knowing where and what they will be.

I found the process of implementation not only extremely demanding but also an invaluable, albeit involuntary, opportunity for cleaning up the books and starting out with a clean slate.

But it has to be said that on many occasions, our pursuit of rogue figures led to frustrating cul-de-sacs where the only way out was to call in our accountant and ask his advice. He was always able to point us in the right direction.

*Alan Williams*

**PUZZLE ANSWER**

THE trick is to take the four matches away from the initial area, as shown, but keep them linked in at a corner.